

SnapNrack

Roof Mounting System

SnapNrack was developed by a team of veteran solar engineers working with installers in the field, dedicated to overcoming the limitations of conventional racking and ensuring a quick, efficient installation. It simplifies and reduces the cost of the solar installation process.

SnapNrack is a top-down roof mounting solution, load tested and engineered for up to 150 mph wind speeds and 100 psf snow loads. See www.snapnrack.com for full details.

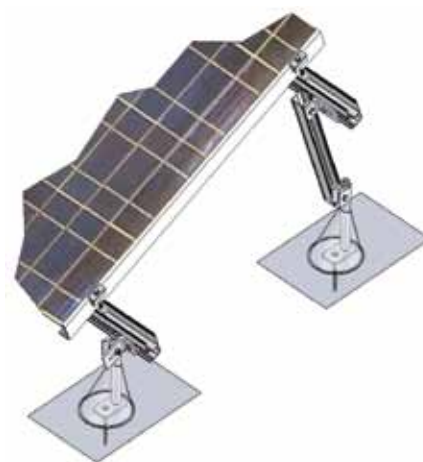
SnapNrack is compatible with modules from virtually any manufacturer. Snap-in sliding channel nuts ensure quick and easy installation and precise alignment. Mid-clamps are a half-inch wide to keep the math simple. Every bolt in the system uses the same size wrench, ensuring efficient installation and reducing man-hours on the roof during installation. And there's no need to drill any holes in the rails to connect standoffs and L-feet. The channels in the rail profiles can house running module leads, providing better aesthetics and improved conductor protection.

SnapNrack is engineered for durability and structural integrity in all environments, with excellent seismic, wind, and snow loading protection. Its compact and efficient rail design reduces material requirements and ensures a low profile installation on your roof.

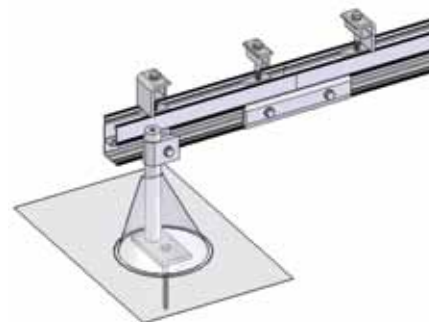
SnapNrack standoffs are height-adjustable to ensure a clean, level installation on even the most uneven roof surface. Tilt-up can be achieved with pieces of cut rail and L-feet.

Rails and components have a 10-year warranty.

You can order complete kits below, or bulk components on the following pages.



Weather-tight flashing and standoffs for tilt applications



SnapNrack Tilt Leg Kits

Tilt angles from 0 to 15 degrees can be configured without legs by simply using SnapNrack standoffs. Use a 5-1/2 inch standoff for the lower rail and a 7-inch standoff for the upper rail. This allows adjustability for shallow tilts.

Tilt angles from 10 to 45 degrees can be configured by using standoffs for both upper and lower rails and adding an extension to the standoff supporting the upper rail using a scrap of rail cut to the appropriate length and drilled with two holes. Calculate the length of the upper rail standoff extension to provide the desired module tilt angle. Tilt leg rails can be cut and drilled in advance to save time on the job site. A simple drill guide will help with locating the holes in the tilt leg.

If the length of the cut rail exceeds 4 feet, consult a structural engineer before proceeding.

Order one tilt-leg hardware kit for each tilt leg required. It contains all the front and rear rail hardware needed for each leg, but does not include standoffs and rail needed to make the legs. Order those items separately.

SnapNrack Universal Roof Mount Kits

SnapNrack universal roof mount kits include black anodized rail, Universal End Clamps (UEC), black mid clamps and black rail end caps so they are suitable for use with black and clear framed modules. The unique universal end clamp is not dependent on module frame depth like typical end clamps because they clamp the bottom of the module frame to the rail. This provides a very strong connection and give a finished look to the end of the mounting rails.

These kits will work for the number of modules listed in the table on the next page for all of the 200 to 235 watt modules listed in this catalog and any other brand of modules with a width of 39.5" or less. Cutting of aluminum rail may be required.

The roof attachment parts are sold separately and depend on the type of roof that the mounting structure is being attached to. See page 30 for SnapNrack roof attachment components.



Universal End Clamp allows rails to be cut flush with the end of the modules

SnapNrack Universal Roof Mount Kits			
Module Quantity	Package dimensions L" x W" x D"	Item code	Price
3	126 x 4 x 4	015-09950	\$215
4	166 x 4 x 4	015-09951	\$280
5	126 x 4 x 4	015-09952	\$369
6	126 x 4 x 8	015-09953	\$435
7	166 x 4 x 8	015-09954	\$500
8	166 x 4 x 8	015-09955	\$565
9	166 x 4 x 8	015-09956	\$655
10	166 x 4 x 8	015-09957	\$719

SnapNrack Bulk Parts

Rails, clamp sets and roof attachment parts are sold separately below, and on the next page.

Rail Sets

Rails are sold in pairs, as rail sets, offered in two lengths to simplify ordering. The 122-inch rail set accommodates a single row of 3 modules in the 200-watt range. The 162-inch rail set will accommodate four modules in the 200 watt range. The chart below shows which rails and how many splice kits to use based on the number of modules to be installed in a single row. All of the 200 watt modules in this catalog are 39.5 inches wide or less. If you are installing 5 module rows, each row will use one 122 inch rail set and half of a 162 inch rail set. For other module widths, calculate rail length for your installation and remember to add 1/2" between modules for mid clamp spacing. These light-weight aluminum rails can be cut with a chop saw or circular saw with a carbide blade, a saber saw with a metal cutting blade, or a hack saw.



Rail sets and splice kits to order	Item code		Number of modules in a row						
	Clear	Black	3	4	5 - 6	7	8	9	10
No. of 122-inch rail sets to order	015-09814	015-09816	1	0	2	1	0	3	2
No. of 162-inch rail sets to order	015-09817	015-09818	0	1	0	1	2	0	1
Splice kits to order	015-09961	n/a	0	0	2	2	2	4	4

Standard Rail Set Prices					
Description	Fits quantity of modules	Clear aluminum		Black anodized	
		Item code	Price	Item code	Price
SnapNrack standard rail set 122" - clear	3 module	015-09814	\$132	015-09816	\$163
SnapNrack standard rail set 162" - clear	4 module	015-09817	\$176	015-09818	\$217
Rail cut fee includes splice kit (for UPS shipping)		015-09829	\$30	015-09829	\$30
Splice kit - single bar with hardware		015-09961	\$9	015-09963	\$13

Standard Top-Mount Clamp sets for fastening the PV modules to the rail

For each row of modules we suggest you buy a 3-module clamp set plus two additional mid clamps for each additional module in the row. Choose your clamps based, first, on the module frame thickness and then on the quantity of modules to install. SnapNrack clamps are available individually, in bulk packs, and in a 3-module clamp set. You can also buy bulk end clamps and mid clamps on the next page. See the examples below.

Example 1: Evergreen ES-A-200 modules have a 1.8-inch thick frame. Eight (8) ES-A-200 modules require a 1.8-inch 3-module set (item code 015-09929) and 10 mid clamps (item code 015-09903, or one 12-pack item code 015-09904).

Example 2: REC 210-230 AE-US modules have a 1.69-inch thick frame. Seven (7) REC 215 AE-US modules require a 1.69-inch 3-module set and 8 mid clamps.

3-Module Clamp Sets w/ bolts & nuts					
Frame depth	Modules	Clear aluminum		Black anodized	
		Item code	Price	Item code	Price
1.34"	SolarWorld SW230	015-09910	\$22	015-09911	\$27
1.4"	Kyocera GX-LP	015-09916	\$22	015-09917	\$27
1.5"	REC - PE	015-09951	\$22	015-09952	\$27
1.6"	Evergreen ES-C 80/120	015-09920	\$22	015-09953	\$27
1.69"	REC-AE-US	015-09925	\$22	015-09925	\$27
1.8"	Evergreen ES-A & Mitsubishi	015-09929	\$22	015-09931	\$27
1.97"	SCHOTT POLY	015-09934	\$22	015-09937	\$27



SnapNrack Bulk SnapNrack Module Top Clamps

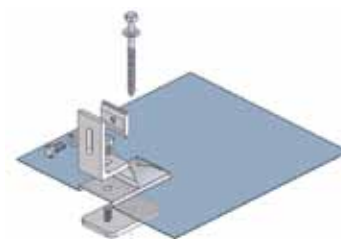
Order bulk clamps from the table below. For each row of modules, you will need 2 mid-clamps for each space between two modules in the row, and 4 end-clamps. For example, a four-module row would need 6 mid clamps. Use end clamps that match the module frame thickness or use Universal End Clamps for any module with a typical internal L-frame.



Bulk Module Clamps w/ bolts & nuts										
Description	Frame depth	Modules	Clear aluminum				Black anodized			
			Single pieces		12 pack		Single piece		12 pack	
			Item code	Price	Item code	Price	Item code	Price	Item code	Price
Mid clamp	< 2"		015-09903	\$4	015-09904	\$29	015-09906	\$6	015-09907	\$37
Mid clamp	2" +		015-09905	\$4	015-09902	\$29	015-09871	\$6	015-09872	\$37
Universal end clamp	All	All brands	015-09943	\$7	015-09944	\$75				
End clamp	1.34	SolarWorld	015-09909	\$4	015-09913	\$35	015-09912	\$7	015-09914	\$47
End clamp	1.4	AEE Series HE	015-09915	\$4	015-09873	\$35	015-09918	\$7	015-09874	\$47
End clamp	1.5	REC - PE	015-09875	\$4	015-09876	\$35	015-09877	\$7	015-09878	\$47
End clamp	1.6	Evergreen ES-C	015-09921	\$4	015-09879	\$35	015-09924	\$7	015-09880	\$47
End clamp	1.69	REC AE-US	015-09923	\$4	015-09938	\$35	015-09922	\$7	015-09935	\$47
End clamp	1.8	Evergreen ES-A, Mitsubishi, Kyocera GX-LPU & GX-LB, SANYO N Series	015-09927	\$4	015-09928	\$35	015-09930	\$7	015-09940	\$47
End clamp	1.97	SCHOTT POLY	015-09933	\$4	015-09942	\$35	015-09936	\$7	015-09941	\$47
SnapNrack splice kit - single bar with hardware			015-09961	\$9	015-09962	\$86	015-09963	\$13	015-09964	\$136
SnapNrack rail end cap 12 piece - black rubber									015-09994	\$13
SnapNrack rail cover clear - two 48" pieces			015-09995	\$17						
Tilt leg hardware kit - clear (2 L-foot with hardware)			015-09972	\$10						
SnapNrack channel nut 12 pack					015-09993	\$9				

SnapNrack Roof Attachment Components

We offer a variety of roof attachment components. Some may be used individually and others require a combination of components. For simple flush mount to a roof with composition shingles we recommend the Flashed L-foot. If the roof has tile or thick roofing material then you probably need a stand-off. The Standing Seam Clamp is designed to be used to attach rails to a standing seam metal roof and is to be used in conjunction with the SnapNrack rail mounting system. The Corrugated Roof Block is for use with standard corrugated metal roofing. It spans across a ridge and provides a flat mounting surface for an L-foot.



Roof Attachment Parts								
Description	Clear aluminum				Black anodized			
	Single pieces		12 pack		Single pieces		12 pack	
	Item code	Price	Item code	Price	Item code	Price	Item code	Price
SnapNrack L-foot - clear	015-09978	\$5	015-09977	\$45	015-09979	\$6	015-09980	\$54
SnapNrack Flashed L-foot			015-09975	\$164	015-09985	\$17	015-09981	\$173
SnapNrack standoff spacer 1"			015-09983	\$20				
SnapNrack standoff - 5.5"	015-09973	\$17	015-09986	\$176				
SnapNrack standoff - 7"	015-09974	\$19	015-09988	\$182				
Corrugated Roof Block for metal roofs			015-09989	\$83				
Oatey flashing #11830 12.5" x 8.75"	015-00162	\$10	014-00629	\$104				
Oatey flashing #11831 18" x 18" galv	015-00163	\$20						
Commercial Standing Seam Metal Roof Clamp								
Standing Seam Metal Roof Clamp	015-09945	\$9	015-09946	\$94				



Unirac

NEW! CLICKSYS Mounting system

Engineered for flush roof mounting applications, CLICKSYS is easily installed on most roofing types, including barrel and Spanish tiles. The unique I-beam design of CLICKSYS optimizes strength, eliminates excess material found in other systems, and offers a cost effective solution. With no drilling required and "click and secure" connections eliminating the need for nuts and bolts, CLICKSYS gets installers off the roof in less time when compared to other competitive products. 10-year warranty.

The 100-series aluminum support beams come in a mill finish, 144 inches long.

Flange connections snap on to support beams without the need of hardware or tools. The 1-flange connection is for use in conjunction with standoffs, Quick Mount PV, or when directly installing on composite shingles using a lag bolt. The 2-flange connections come with or without the integrated butyl backing and are designed to be secure beams to the roof using 3" Concealor screws. Concealor screws can be driven into the structure with a cordless drill with no need for pilot holes.

CLICKSYS Standoffs offer more elevation for greater airflow under a finished array. They are accompanied with all hardware needed including a 1 flange connection and lag bolts.

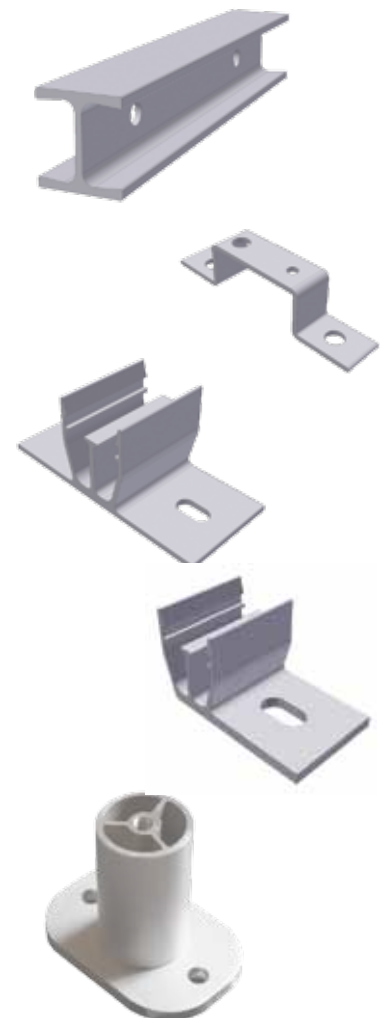
Quick Mount PV flashing is custom designed for CLICKSYS. Each flashing comes with 1 Flange Connection and lag hardware. This flashing provides a clear advantage over standard flashing techniques by increasing the height $\frac{3}{4}$ " and providing a faster installation.

Sliders and Top Mounting Clamps

Sliders hold hex bolts in place while top mounting clamps securely grip any point of the module frame, freeing you from the constraints of module mounting holes. See page 34 for module frame sizes designated by letters A-K.

All components are sold in bulk quantities. See table below for quantities and pricing.

Unirac part #	CLICKSYS parts description	Quantity	Item code	Price
010144M-0050	Beam 100 Series 144"	50	014-04200	\$1,895
003020C-0048	Beam splice kit, clear	48	014-04230	\$97
003021C-0048	Beam splice kit, clear w/ grounding	48	014-04231	\$194
004000M-0048	Two flange connection w/ 3" screws	48	014-04210	\$419
004001M-0048	Two flange connection w/ 3" screws & butyl	48	014-04211	\$429
004010M-0048	One flange connection w/ lag bolt	48	014-04212	\$387
005003C-0024	3" standoff w/ one flange connection	24	014-04215	\$345
005004C-0024	4" standoff w/ one flange connection	24	014-04216	\$362
005006C-0024	6" standoff w/ one flange connection	24	014-04217	\$395
005007C-0024	7"standoff w/ one flange connection	24	014-04218	\$411
005020S-0018	QM flashing 9.5" x 12.5", SS, w/ one flange	18	014-04214	\$569
002001C-0048	End clamp A with slider	48	014-04240	\$133
002002C-0048	End clamp B with slider	48	014-04241	\$133
002003C-0048	End clamp C with slider	48	014-04242	\$133
002004C-0048	End clamp D with slider	48	014-04243	\$133
002005C-0048	End clamp E with slider	48	014-04244	\$133
002006C-0048	End clamp F with slider	48	014-04245	\$133
002009C-0048	End clamp J with slider	48	014-04246	\$133
002010C-0048	End clamp K with slider	48	014-04247	\$133
002026C-0048	Mid clamp A with slider	48	014-04250	\$133
002027C-0048	Mid clamp B-C with slider	48	014-04251	\$133
002028C-0048	Mid clamp D with slider	48	014-04252	\$133
002030C-0048	Mid clamp E-F-J - K with slider	48	014-04253	\$133
008000S-0050	UGC-2 grounding clip, SS, qty 50	50	014-04232	\$115



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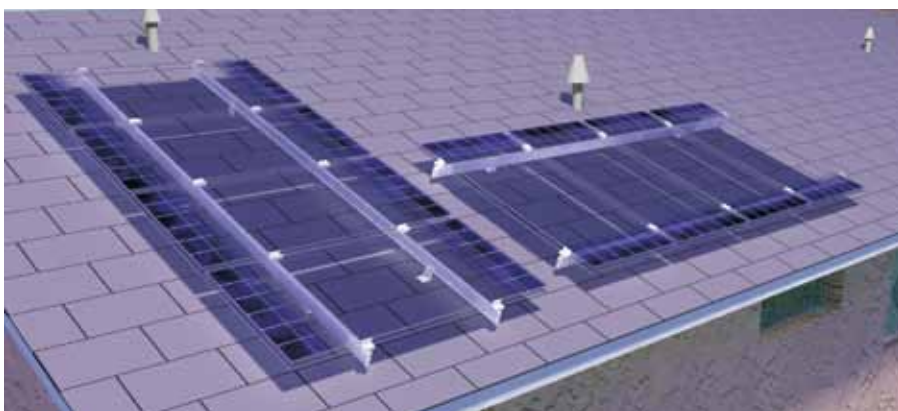
SolarMount

Unirac's SolarMount is a fast, easy, safe way to install a PV array in virtually any roof or ground installation. Bottom mounting clips and tilt legs supplement traditional top mounting clamps. As a result, the system accommodates the widest variety of installations and assembly preferences – on the roof and on the ground. Any framed module sold in North America can be mounted using SolarMount.

Once you've selected the PV modules and planned your installation layout, you're ready to choose SolarMount components. The table on the following page shows what components to use if you are bottom-mounting the modules. The table on page 34 shows what parts to use if you are top-mounting the modules. If you need tilt legs for the mounts, see the explanation on page 36. Rail and parts to complete your mounting system can be found on pages 35 to 37.

When sizing is complete, rails, splices, and L-feet may be ordered in two ways: In kits or in bulk. 2- and 4-rail kits on page 35 contain just the right quantities of each component for a given installation.

The 8-piece bulk rail bundles on page 35 require the addition of L-feet, and splices when necessary, along with top-mount clamps (either bulk or in pre-packaged sets) or back mount clips.



Unirac SolarMount rails can be mounted vertically or horizontally.

Choose a Top-Mounting or Bottom-Mounting System

On pitched roofs, mount rails either parallel or perpendicular to the rafters. Assembly sequence is a common determining factor. Select top-mounting clamps if you prefer to install modules last – after you've attached rails to installed footings. This sequence is especially convenient with modules that have Multi-Connect cables. Select bottom mounting clips if you plan to attach modules to rails prior to final installation. This sequence is well suited for modules that must be pre-wired. Bottom-mounting clips use space more efficiently because they do not require the 1" space between modules needed by top clamps.

The use of top-mounting clamps is generally easier when flush-mounting to a roof. Always use top-mounting clamps

when flush mounting to standoffs. If using bottom-mounting clamps with L-feet, follow the installation manual carefully to make sure footing slots are accessible during final installation.

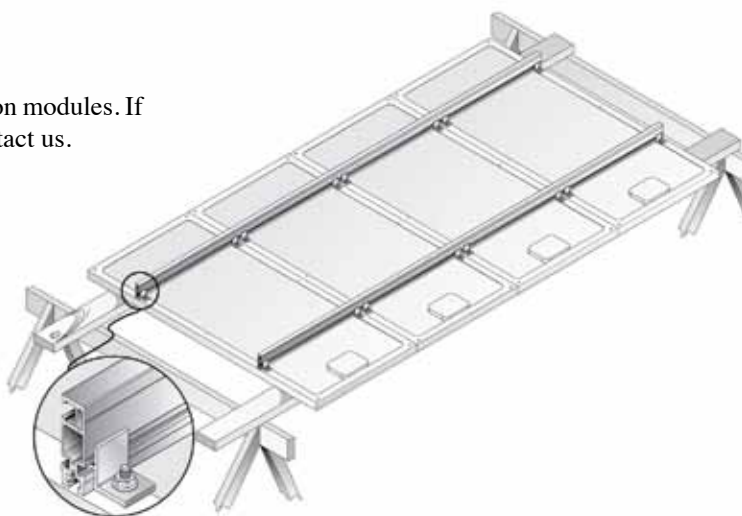
In roof mounts, when using top-mounting clamps, no extra roof bracing is needed since rails or mounting feet can be adjusted to match rafter spacing. With bottom-mounting clamps, spacing between the rails depends on spacing between the mounting holes of your particular PV module, and it is unlikely that they will match rafter spacing if rails are mounted parallel to rafters. In that case, place a stringer over the roof or mounting blocks beneath it. Never attach footings to the sheathing alone – such an arrangement will not meet code and will leave the installation and roof vulnerable to severe damage from wind.

SolarMount Bottom-Mounting Sizing

Rail set lengths

This table lists the length of the rails required for many common modules. If you need rail sizing for a module not listed below, please contact us.

Order bulk bottom mount clips below.



Rail Length Sizing - Bottom Mount Clips

Module brand and model		Rail length (inches) by number of modules per row										
		2	3	4	5	6	7	8	9	10	11	12
AEE	AE-80HE	48	72	96	120	132	156	180	192	216	240	264
BP Solar	BP380, BP485	48	72	96	106	132	156	180	192	216	240	264
	BP3125	60	84	106	144	168	192	216	240	276	300	324
	BP3160, BP4160, BP4170	72	96	132	156	192	226	252	288	312	348	384
Evergreen	ES-A series	84	120	156	192	216	264	312	348	384	420	
	ES-C	60	84	120	144	168	192	216	252	276	300	324
Kyocera	KD135GX-LP	60	84	106	132	156	180	216	240	264	288	312
	KD180GX-LP, KD205-210, 230	84	120	156	204	240	276	312	360	396	432	
Mitsubishi	UE125MF5N	60	84	120	144	168	204	240	252	276	300	324
	UD185MF5	72	106	132	168	204	240	264	300	336	372	408
	UJ6 series 212 to 235	84	120	168	204	240	276	324	360	396	432	
REC Solar	AE & PE series	84	120	168	204	240	276	324	372	408		
SANYO	HIT-205N, 210N, 215N	72	96	132	168	192	240	264	288	324	360	384
SCHOTT	POLY 217 to 232	84	120	156	192	226	264	312	348	384	420	
Sharp Solar	NE-80U1	48	72	84	106	132	156	168	192	216	240	252
	ND-L3EJE (123 watt)	60	84	106	132	168	192	216	240	264	288	324
	ND-167U1, ND-167U3	84	120	168	204	240	288	324	360	396		
	NE-165U1, NE-170U1	72	106	132	168	204	240	264	300	336	360	396
	ND-U216 to ND-U230	84	120	168	204	240	276	324	360	396	432	
SolarWorld	SW220 to 235	84	120	168	204	240	288	324	360	396		
Suntech	STP110 to 175	72	106	132	168	204	226	264	300	324	360	396
	STP190 to 210 & STP260 to 280	84	120	168	204	240	276	324	360	396		
SunPower	SPR200, 210, 215, 220	72	106	132	168	204	240	264	300	336	360	396

Bottom-Mount Clips

Order 4 clips for each module in your array. Clips are packed with stainless steel bolts and flange nuts. For use with all modules with mounting holes on the backs of their frames.



Bottom mounting clip

Cable Ties

Cable ties fit into 1/4-inch holes drilled along mounting rails.



Unirac part #	Description	Weight (lbs)	Item code	Price
321002	20 ea. clips	5	014-00875	\$39

Unirac #	Description	Quantity	Item code	Price
990104	100 ea. push mount cable ties	1	014-00895	\$12

Unirac

SolarMount Top-Mounting Sizing

Clamp sizes & rail set lengths

Use this table to determine the size of top mounting clamps for your modules and the length of the rails required for your array. When sizing is complete, rails, clamps, splices, and L-feet may be ordered in kits that contain just the right quantities for a given installation or in bulk packaging (Pro-Paks). See pages 35 to 37 for pricing. All Unirac components have a 10-year product warranty and a 5-year finish warranty.



Rail Length Sizing - Top Mounts

Module brand and model		Clamp size	Rail length in inches, by number of modules per row										
			2	3	4	5	6	7	8	9	10	11	12
AEE Solar	AE-80HE	D	48	72	96	120	144	156	180	204	226	252	264
	BP380, BP485	E	48	72	96	120	144	156	180	192	216	240	252
BP Solar	BP3125	E	60	96	120	144	168	204	226	252	288	312	336
	BP3150, 3160, 4160, 4170, 4175,	E	72	106	132	168	204	240	264	300	324	360	396
Evergreen	ES-A-200 to ES-A-210	F	84	120	156	204	240	276	312	360	396		
	ES-C	K	60	84	106	132	156	180	216	240	264	288	312
Kyocera	KD135GX-LP	C	60	84	120	144	168	192	216	252	276	300	324
	KD180GX-LP	C	84	132	168	204	252	288	324	372	408		
	KD180-230 GX-LPU, GX-LB	F	84	132	168	204	252	288	324	372	408		
Mitsubishi	UE125MF5N	F	60	84	120	144	168	192	216	240	276	300	324
	MF165EB4, 170EB4	F	72	106	132	168	204	240	264	300	336	360	396
	UD185MF5	F	72	106	144	180	216	240	276	312	348	384	420
	UJ6 series 212 to 235	F	84	132	168	204	252	288	324	372	408		
REC Solar	AE series	J	84	132	168	204	252	288	324	372	408		
	PE series	D	84	132	168	204	252	288	324	372	408		
SANYO	HIT-205N, 210N, 215N	F	72	106	144	168	204	240	276	312	336	360	396
SCHOTT	POLY 217 to 232	E	84	132	168	204	252	288	324	372	408		
Sharp Solar	NE-80U1	C	48	72	96	120	144	156	180	204	226	252	276
	ND-L3EJE (123 watt)	F	60	84	120	144	168	192	226	252	276	300	336
	ND-167U1	G	84	132	168	216	252	288	336	372	408		
	NE-175UC1, NE-170U1, NE-185UC1	F	72	106	144	180	204	240	276	312	348	372	408
	ND-200U1 to ND224UC1 & NDU230C	F	84	132	168	216	252	288	336	372	408		
SolarWorld	SW220 to SW245	C	84	132	168	204	252	288	324	372	408		
SunPower	SPR200, 210, 215, 220	F	72	106	132	168	204	240	264	300	336	360	396
Suntech	STP110-24Ab, STP175-24Ab1	C	72	106	144	168	204	240	276	300	336	372	396
	STP190 to 210 & STP260 to 280	E	84	132	168	204	252	288	324	372	408		

SolarMount Standard Rail Kits

Each kit mounts a single row of modules and consists of rails plus L-feet and hardware to attach feet to rails. Splice bars are also included in four-rail kits. To determine row lengths required for your installation, see the sizing table on this page for arrays with top mounting clamps, or the table on page 33 for arrays with bottom mounting clips. Rails, L-feet, and splices are clear-anodized.

Mount rails parallel or perpendicular to rafters.

Where foot spacing must exceed 48 inches, Standard Rail provides the extra strength needed. Install an array flush to a roof or other mounting surface in high profile (rails parallel to rafters) or low profile.

With Standard Rail, there are accessories to handle special circumstances, such as Spanish tile or an uneven roof.

2-rail kits in lengths up to 216 inches

Each kit contains: two rail segments equal to the row length; L-feet; and hardware to join L-feet to rails. Rail kits 106 inches and shorter ship by UPS. Longer rail sets ship by truck freight. To make up long rail kits that are UPS shippable, use two rail kits of 106 inches or less and splices to connect them together.

Two-Rail Unirac SolarMount Kits – L-feet Included					
Rail length	Unirac part #	# of L-ft	Weight (lbs)	Item code	Price
48	300201	4	13	014-01020	\$110
60	300202	4	14	014-01024	\$127
72	300203	4	16	014-01028	\$145
84	300204	4	17	014-01032	\$162
96	300205	4	19	014-01036	\$179
106	300206	4	20	014-01040	\$196
120	300207	6	22	014-01044	\$217
132	300208	6	24	014-01048	\$234
144	300209	6	25	014-01052	\$250
156	300210	6	27	014-01056	\$267
168	300211	6	28	014-01060	\$284
180	300212	6	30	014-01064	\$307
192	300213	8	31	014-01068	\$323
204	300214	8	33	014-01072	\$340
216	300215	8	34	014-01076	\$357

4-rail kits for long rows

Each kit contains four rail segments; two splices; L-feet; and hardware to join L-feet to rails. Rail segments and splices assemble into two spliced rails equal to the row length. Ship via truck freight only.

Four-Rail Unirac SolarMount Kit - L-feet Included						
Rail length	Segment length	Unirac part #	# of L-ft	Ship wt. (lbs)	Item code	Price
226	106/120	300224	10	40	014-01000	\$391
240	120/120	300225	10	42	014-01001	\$408
252	132/120	300226	10	44	014-01002	\$425
264	132/132	300227	10	46	014-01003	\$436
276	144/132	300228	10	47	014-01004	\$453
288	144/144	300229	10	48	014-01005	\$470
300	156/144	300230	12	50	014-01006	\$492
312	156/156	300231	12	52	014-01007	\$509
324	168/156	300232	12	53	014-01008	\$525
336	168/168	300233	12	54	014-01009	\$542
348	180/168	300234	14	56	014-01010	\$559
360	180/180	300235	14	58	014-01011	\$571
372	192/180	300236	14	59	014-01012	\$587
384	192/192	300237	14	60	014-01013	\$604
396	204/192	300238	14	62	014-01014	\$621
408	204/ 204	300239	14	64	014-01015	\$637
420	216/ 204	300240	16	65	014-01016	\$661
432	216/ 216	300241	16	66	014-01017	\$671

Bulk Rail Bundles

Use Unirac Pro-Pak components for large installations or when regularly using SolarMount Standard Rail on multiple installations.

Bulk bundles of Standard Rail consist of 8 rails and do not include L-feet or hardware. See the bottom mount sizing table and/or the top mount sizing table to determine rail length appropriate for your installation. If desired rail length exceeds 240 inches, order a splice and two segments. Spliced segments should be equal or as close to equal as possible.

Pro-Pak Standard Rail Bundles – 8 rails				
Rail Length	Unirac part #	Ship wt. (lbs)	Item code	Price
48	300101	32	014-00810	\$258
72	300103	48	014-00812	\$347
84	300104	54	014-00813	\$392
96	300105	62	014-00814	\$437
106	300106	68	014-00815	\$481
120	300107	80	014-00820	\$533
132	300108	88	014-00821	\$583
144	300109	95	014-00822	\$633
156	300110	102	014-00823	\$683
168	300111	109	014-00824	\$734
180	300112	116	014-00825	\$785
192	300113	123	014-00826	\$835
204	300114	130	014-00827	\$856
216	300115	137	014-00828	\$936
228	300116	144	014-00831	\$975
240	300117	152	014-00829	\$1,026

Splice Bars and Plates

Splice bars are used to join together lengths of SolarMount Rail or SunFrame. Splice plates are also structural and may be used only with SolarMount Standard Rail. Expansion joints allow for thermal expansion and may be necessary when rails exceed 30 feet. Only splice bars may be used for thermal expansion joint. To create an expansion joint, slide the splice bar into the footing slots of both rail lengths. Leave a half inch between the segments. Secure the splice bar with two screws on one side only. Footings (such as L-feet or standoffs) should be secured normally on both sides of the splice. No PV module should straddle the expansion joint.



Splices for Standard Rail with Hardware				
Unirac part #	Description	Wt. (lbs)	Item code	Price
310216	20 ea splice plates	14	014-00888	\$271
310229	20 ea splice bars	10	014-01267	\$112

Unirac

Low-Profile Tilt Legs

Low-profile orientation minimizes the vertical height of your array to hide an array behind a parapet or minimize wind loading. You can also optimize tilt angle on a pitched roof to maximize system performance. In low profile arrays, tilt angle depends on leg length and the location of the module mounting holes. Each low-profile tilt leg kit contains one square tube and one strut.

Tilt angles for low-profile legs

Choose (a) the correct maximum leg extension for your desired tilt angle from the table below and (b) the number of kits required from the table at right. Item codes in table below.



Quantity of Legs Required	
Rail length (inches)	No. of legs required
48 to 106	2
120 to 180	3
192 to 216	4
226 to 288	5
300 to 336	6
348 to 408	7
420 to 432	8

Quantity of tilt legs required

The number of tilt legs in a low-profile array depends on the length

Sizing Table for Unirac Low-Profile Tilt Legs

(Tilt angle range given in degrees from horizontal.)

of the mounting rails.

Low profile leg length:		12-inch	30-inch	44-inch
Unirac part #		310121	310122	310123
Item code		014-01185	014-01189	014-01193
Price		\$36	\$45	\$52
Module make and model		Tilt angle range (degrees)		
AEE Solar	AE80HE, AE90HE	15-19	31-49	45-60
Evergreen	ES-A-200	16-20	34-53	48-60
Kyocera	KC65, 85, KD135	12-21	24-38	35-57
	KD180	10-16	16-46	38-72
	KD210GX-LP/LPU	7-14	22-40	33-60
SANYO	HIT205N, 210N, 215N	12-15	25-39	36-60
Sharp	80	14-18	31-48	44-60
	123	13-17	28-44	40-60
	165, 175, 185	12-15	25-39	36-59
	ND200, 208	13-16	27-42	39-60
SolarWorld	SW230	14-18	30-47	43-60
	SW165/175	12-15	25-39	36-60
REC	AE-US and PE	14-18	30-47	43-60
SunPower	SPR200, 210, 215, 220	17-22	37-58	53-60
SCHOTT	POLY 217 - 230	14-18	30-47	43-60
Suntech	STP110-24b, STP175	9-12	19-30	28-45
Mitsubishi	UE125	15-19	31-50	45-60
	UD190/185	12-15	25-39	36-60
	UJ230	13-16	27-42	39-60

High-Profile Adjustable Tilt Legs

In high-profile arrays, tilt angle depends on the length of the legs and the rails. To determine the length of your rails, consult this top mounting arrays sizing table and/or this bottom mounting arrays sizing table. Quantity of tilt legs required: Order one high profile tilt leg kit for each rail kit.

Rails 120 inches and longer require leg kits with 4 legs per kit – one long leg and one short leg per rail.

If ordering bulk rail packs, order one high-profile tilt leg kit for each pair of rails required in your installation. Do not use high-profile legs with rails longer than 180 inches. Never use spliced rails with this configuration.



Sizing Table for High-Profile Tilt Legs

(Tilt angle range is in degrees from horizontal.)

One Leg Per Rail (2 legs per kit) – for Rails 48" to 106"			
Maximum leg length	12 "	44 "	72 "
Unirac part #	310107	310108	310109
Item code	014-01160	014-01164	014-01168
Price	\$51	\$78	\$103
Rail Length	Tilt angle range (degrees)		
48	9 - 21	30 - 60	N/A
60	7 - 17	24 - 60	37 - 60
72	6 - 14	19 - 54	31 - 60
84	5 - 12	17 - 46	26 - 60
96	4 - 10	14 - 40	23 - 60
106	4 - 9	13 - 36	21 - 60
Two Legs per Rail (4 legs per kit) – for Rails 120" to 180"			
Maximum leg length	18 inch	64 inch	104 inch
Unirac part #	310111	310112	310110
Item code	014-01172	014-01176	014-01180
Price	\$96	\$161	\$217
Rail length	Tilt angle range (degrees)		
120	5 - 10	17 - 38	26 - 60
132	6 - 10	17 - 37	24 - 60
144	6 - 9	16 - 33	22 - 43
156	5 - 10	14 - 30	20 - 49
168	5 - 7	13 - 28	18 - 46
180	3 - 7	12 - 26	17 - 43

Standoffs, Flashings and Accessories

Standoffs are sold in packs of 12 and come with stainless-steel hardware and 2 lag bolts. Use flat-top standoffs with L-feet to attach solarmount or SunFrame rails



Height (inch)	Wt. (lbs)	Unirac part #	Item code	Price
Flat-top 2-piece, Clear-anodized 1-5/8" OD Aluminum Standoffs				
3	9	310553	014-00789	\$153
4	10	310554	014-00791	\$165
6	12	310556	014-00793	\$189
7	13	310557	014-00795	\$202
Flat-top 2-piece, Bronze-anodized 1-5/8" OD Aluminum Standoffs				
3	9	310653	014-00797	\$160
4	10	310654	014-00799	\$173
6	12	310656	014-00801	\$197
7	13	310657	014-00803	\$209
Flat-top One Piece Zinc-Plated Steel 1-5/8" O.D. Standoffs				
3	16	310051	014-00661	\$214
4	18	310052	014-00662	\$224
6	22	310053	014-00664	\$233
7	24	310054	014-01233	\$255
Raised-Flange Zinc-Plated Steel 1-5/8" O.D. Standoffs				
3	16	310047	014-01237	\$221
4	18	310048	014-01241	\$245
6	22	310049	014-01245	\$262
7	25	310050	014-01249	\$275

Shims

Horseshoe shaped shims level or raise standoffs and L-feet to precisely align rails. Shims come in three color-coded thicknesses in packs of 20.



Unirac part #	Description	Item code	Price
990105	20 ea. 1/16" shims (blue)	014-00649	\$1.50
990106	20 ea. 1/8" shims (red plastic)	014-00651	\$3
990107	20 ea. 1/4" shims (black)	014-00653	\$4.50
990108	20 ea. tapered shims (black)	014-00655	\$11

Flashings

These flashings work with the steel and aluminum standoffs above. Soft aluminum flashings can be molded to fit curved roofing material, such as Spanish tile. No-Caulk flashings have a rubber seal that fits the 1-5/8 steel flashings.



Description	Wt. (lbs)	Unirac part #	Item code	Price
No-Caulk Collar Flashings for Steel Standoff Bulk 12-piece pack				
12 ea. galvanized, 121/2" x 83/4" base (Oatey # O-11840)	11	990101	014-00621	\$91
12 ea. aluminum, 121/2" x 83/4" base (Oatey # O-12920)	11	990102	014-00623	\$132
12 ea. soft aluminum, 18" x 18" base (Oatey # O-12836)	14	990103	014-00625	\$189
Soft Aluminum Flashings for Aluminum Standoffs Bulk 12-piece pack				
12 ea. galv., 121/2" x 83/4" base, no-caulk (Oatey # O-11830)		990109	014-00629	\$104

Please call us with any questions! Our contact information is on the cover.

Pro-Pak Top Clamps

See this sizing table to determine clamp size letter. End clamps: Order 4 for each row of modules you plan to mount. Mid clamps: For each row, take one less than the number of modules in the row and multiply that figure by 2 to determine the number of clamps needed.

The end clamps and mid clamps come with stainless steel T-bolts and flange nuts. The H clamps, which can be used as mid and end clamps, come with hex bolts.

Unirac part #	Description	Wt. (lbs)	Item code	Price
End Clamps with Stainless Steel T-Bolts and Flange Nuts				
320012	20 ea. A clamps	6	014-00840	\$44
320013	20 ea. B clamps	6	014-00841	\$44
320014	20 ea. C clamps	6	014-00842	\$44
320081	20 ea. C clamps; dark bronze	6	014-00861	\$57
320015	20 ea. D clamps	6	014-00843	\$44
320185	20 ea. D clamps dark bronze	6	014-00863	\$57
320016	20 ea. E clamps	6	014-00844	\$44
320017	20 ea. F clamps	6	014-00845	\$44
320123	20 ea. F clamps dark bronze	6	014-00846	\$57
320083	20 ea. G clamps dark bronze	6	014-00847	\$57
320079	20 ea. J clamps	6	014-00849	\$44
320221	20 ea. K clamps	3	014-00860	\$44
Mid Clamps with Stainless Steel T-Bolts and Flange Nuts				
320020	20 ea. A-B-C mid clamps	6	014-00867	\$49
320084	20 ea. A-B-C mid clamps, bronze	6	014-00865	\$68
320021	20 ea. D-E-F-J-K mid clamps	6	014-00869	\$49
320085	20 ea. D-E-F-J-K mid clamps brnz	6	014-00878	\$68
320087	20 ea. G mid clamps, dark bronze	6	014-00871	\$68
H Clamps Used as Mid & End Clamps – Includes Hex Bolts				
320086	20 ea. H clamps, dark bronze	6	014-00873	\$68

L-Feet

Pro-Pak: Each L-foot includes a stainless steel bolt and flange nut to attach the foot to a SolarMount rail. Lag bolts are not included.



Unirac part #	Description	Weight (lbs)	Item code	Price
310067	20 ea. L-feet	5	014-00891	\$85

Unirac

SunFrame

When an installation has to look great, SunFrame offers finish choices and low, clean lines that become as natural a part of a home as a skylight. The rails are available in clear and dark bronze finish to match the module frames. The SunFrame rails run horizontally across the roof between the modules making the array look like one large skylight. Installation is slightly more difficult than using SolarMount with top clamps because rail alignment must be perfect. Since the modules will sit closer to the roof, the array may operate at a higher temperature and there may be a small loss of performance. Note: SunFrame cannot be used with REC AE-US modules.

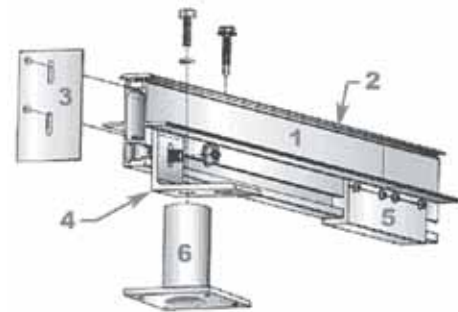
Contact us with your module type, quantity, number of rows and foot spacing for design help, or use the online SunFrame estimator at...

<http://www.unirac.com/estimator/part/estimator/detail/solar>

...to get a list of components needed. With this list, we can give you price and delivery time.

Components

1. Inter-module rails provide support shelves for the modules. Depending on module thickness, its upper surface can be as little as 2.125 inches above the roof. Rails come in bulk packs of eight 192" pieces in clear-anodized or dark-bronze finish.
2. 192" module-specific cap strips secure modules and finish the array topside, forming a gap-free frame. Self-drilling screws at 16" intervals provide holding power. Order cap strips for the module brand and model to be installed. Cap strips are available in clear or dark bronze anodized finishes.
3. End caps finish rail ends to complete the frame.
4. L-feet attach directly through asphalt shingle roofs and support the rails one-half to three-quarters of an inch above the roof surface to provide convective air flow for ventilation.
5. Splices safely extend rails.
6. Standoffs (optional), designed for standard flashing, support L-feet above tile or shake roofs. See page 37.



CreoTecc

Cast Aluminum Roof Hooks

These high quality German-made cast aluminum roof attachments make it easy to put solar on tile roofs without cutting the tiles. They can support up to 600 pounds and their wide mounting flange allows for perfect placement on tile while still screwing into a rafter.

There is a front-fit model that allow rails to run across the roof, a side-fit model that allows rails to run up and down the roof, and a bottom-fit model for use with L feet.



CreoTecc Aluminum Roof Hooks



Description	Item code	Price	Description	Item code	Price	Description	Item code	Price
Side mount roof hook	014-09811	\$30	Front mount roof hook	014-09813	\$30	Bottom mount roof hook	014-09815	\$30

Security Hardware

Security hardware dramatically increases the difficulty and time required for a thief to dismantle a PV array and steal its components. Breakaway nuts work well in conjunction with top mounting clamps and footing bolts. Note that star head bolt heads do not fit into SolarMount rail slots (where standard bolt heads are inaccessible). Use them with bottom mounting module clips and other locations where heads are exposed.



Unirac part #	Description	Quantity	Item code	Price
321221	Star head bolt, s/s, 3/8" x 11/4"	20	014-02116	\$69
321222	Breakaway nut, aluminum, 1/4"	20	014-02106	\$24
321223	Breakaway nut, aluminum, 3/8"	20	014-02110	\$32
321209	Star Key (Tool) 1/4"	1	014-02125	\$19
321210	Star Key (Tool) 3/8"	1	014-02126	\$23

EJOT

NEW! Solar Fastening System

These specially designed solar fasteners are for use with L-feet to support rails on tile or metal roofing. 5/16" thread bolts for metal substructures and 5/16" lag bolts for wood substructure.

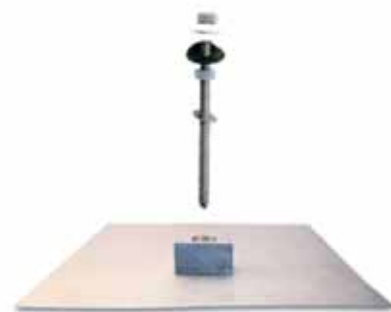


EJOT part #	Length (inches)	Item code	Price
For wood substructures			
3150851905	5.3	014-06451	\$13
3151351905	7.3	014-06452	\$14
3152051905	10	014-06453	\$18
For metal substructures			
3130851905	5.3	014-06462	\$13
3131251905	7.3	014-06464	\$14
3132051905	10	014-06466	\$15

Quick Mount PV

All-In-One Waterproof Flashing

The Quick Mount PV product is an all-in-one waterproof flashing and mount designed to anchor photovoltaic racking systems to a new or existing roof. The flashing includes an attached standoff block and stainless steel hardware to attach with an L-foot to racking from Unirac, DP&W, and SnapNrack. No roof cutting is required. Sold in boxes of 12 flashings.



Composition Shingle Flashing

The composition shingle flashing mount is made of aluminum and includes stainless steel hardware. It works with all standard racks, installs seamlessly and provides low-profile mount. The flashing includes an attached standoff block and stainless steel hardware.



Curved Tile Flashing

The curved tile mount is comprised of all-aluminum standoff and flashing. All hardware is included. The tile is removed, the standoff is bolted into position, the tile is cut to allow for the standoff to pass through. An additional peel-and-stick flashing is included for waterproofing at the sub-roof. The aluminum flashing is then placed and molded to the shape of the tiles.



Flat Tile Mount

The flat tile mount is comprised of an all-aluminum mount and tile flashing cover. All stainless steel hardware is included. The aluminum tile cover replaces one existing tile. It works with most tiles that measure from 11-1/2" to 12-3/8" wide and have a pan lip on the left side and a cover lip on the right side. Call us for questions regarding further compatibility with you roof tiles.



Shake Mount Flashing

This 18" x 18" aluminum flashing is large enough to do a good job flashing on wood shake roofs. Available in mill finish, clear anodized or bronze anodized finish.



Roofing Bar

This 24" roofing bar removes nails.



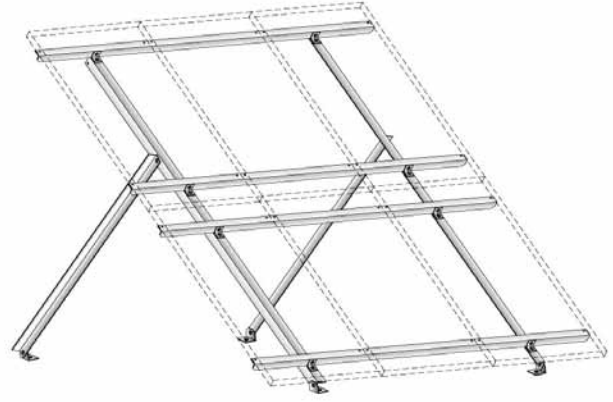
Quick Mount model	Description	Weight (lbs)	Item code	Price
QMSC-A 12	Composition mounts - mill finish 12" x 12" – 12 pack	16	014-06315	\$413
QMSC-C 12	Composition mounts - clear anodized finish 12" x 12" – 12 pack	16	014-06317	\$562
QMSC-B 12	Composition mounts - bronze anodized finish 12" x 12" – 12 pack	16	014-06316	\$635
QMLC-A 12	Shake mounts - mill finish 18" x 18" mount – 12 pack	30	014-06319	\$498
QMLC-C 12	Shake mounts - clear anodized finish 18" x 18" – 12 pack	30	014-06320	\$793
QMLC-B 12	Shake mounts - bronze anodized finish 18" x 18" – 12 pack	30	014-06321	\$940
QMFT T 12	Flat tile flashing - 12" x 17" - 12 pack	25	014-06323	\$304
QMCT L 12	Curved tile flashing - 18" x 18" - 12 pack	65	014-06327	\$580
QMTMH A 12	Tile mount hardware - mill finish - 12 pack	13	014-06335	\$383
QMTMH C 12	Tile mount hardware - clear anodized finish - 12 pack	13	014-06337	\$458
QMRB 1	24" Roofing bar - nail removal tool	4	094-00143	\$53

ADVERTISEMENT

DPW Solar

POWER-FAB Two-Tier Ground Mounts

DPW Solar's two-tier ground mounts are made from 6061-T6 structural aluminum extrusions with a mill finish. Modules are racked in two rows with module length vertical. Models are available to hold from 4 to 10 modules (depending on module width). The two-tier mount is a cost-effective way to create large ground mounted arrays. Multiple two-tier mounts may be installed next to each other in an east-west direction. These mounts may also be used as roof mounts. The mounts listed have adjustable back legs. Mounts for other brands and sizes of modules and mounts with fixed back legs are available. Please contact us for information and pricing on mounts for other brands and sizes of module.



Module type	DPW two-tier mount part number	# of modules	Item code	Price
Evergreen ES-A-200	DP-TTRGM4-ESA200	4	013-08756	\$840
	DP-TTRGM6-ESA200	6	013-08757	\$956
	DP-TTRGM8-ESA200	8	013-08758	\$1,103
Kyocera KD180	DP-TTRGM4-KD180	4	013-08764	\$730
	DP-TTRGM6-KD180	6	013-08765	\$830
	DP-TTRGM8-KD180	8	013-08766	\$960
Kyocera KD205 KD210	DP-TTRGM4-KD205	4	013-08767	\$780
	DP-TTRGM6-KD205	6	013-08768	\$885
	DP-TTRGM8-KD205	8	013-08769	\$1,030
Kyocera KD230	DP-TTRGM4-KD230	4	013-09785	\$800
	DP-TTRGM6-KD230	6	013-09787	\$910
	DP-TTRGM8-KD230	8	013-09789	\$1,050
Mitsubishi UD185	DP-TTRGM4-MT185	4	013-08441	\$655
	DP-TTRGM6-MT185	6	013-08775	\$745
	DP-TTRGM8-MT185	8	013-08776	\$865
	DP-TTRGM10-MT185	10	013-8447	\$1,015
Mitsubishi UJ212 UJ230	DP-TTRGM4-MT230	4	013-09792	\$800
	DP-TTRGM6-MT230	6	013-09794	\$910
	DP-TTRGM8-MT230	8	013-09796	\$1,050
REC Solar AE-US PE	DP-TTRGM4-REC210	4	013-08778	\$800
	DP-TTRGM6-REC210	6	013-08779	\$910
	DP-TTRGM8-REC210	8	013-08780	\$1,050

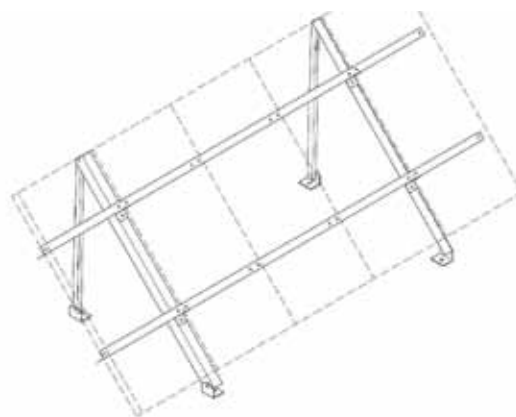
Module type	DPW two-tier mount part number	# of modules	Item code	Price
SANYO HIT215N	DP-TTRGM4-SY215	4	013-09765	\$675
	DP-TTRGM6-SY215	6	013-09767	\$765
	DP-TTRGM8-SY215	8	013-09769	\$885
Sharp 165,170, 175,185	DP-TTRGM4-SHV175	4	013-08812	\$655
	DP-TTRGM6-SHV175	6	013-08813	\$745
	DP-TTRGM8-SHV175	8	013-08814	\$865
	DP-TTRGM10-SHV175	10	013-08815	\$1,015
Sharp 208 216, 224, 230	DP-TTRGM4-SHP208	4	013-08791	\$800
	DP-TTRGM6-SHP208	6	013-08792	\$910
	DP-TTRGM8-SHP208	8	013-08793	\$1,050
SCHOTT POLY 217, 220, 225	DP-TTRGM4-SCT220	4	013-09771	\$800
	DP-TTRGM6-SCT220	6	013-09773	\$910
	DP-TTRGM8-SCT220	8	013-09775	\$1,050
SolarWorld 220, 230	DP-TTRGM4-SWD230	4	013-09778	\$800
	DP-TTRGM6-SWD230	6	013-09780	\$910
	DP-TTRGM8-SWD230	8	013-09782	\$1,050
SunPower SPR-200, 210, 220	DP-TTRGM4-SPR200	4	013-08798	\$655
	DP-TTRGM6-SPR200	6	013-08799	\$745
	DP-TTRGM8-SPR200	8	013-08800	\$865
	DP-TTRGM10-SPR200	10	013-08801	\$1,015

POWER-FAB Low-Profile Ground Mounts

DPW Solar's low-profile ground mounts are made from 6061-T6 structural aluminum extrusions with a mill finish. The module length is vertical (each module is in portrait-mode) and modules are mounted side-by-side. Models are available to hold from 3 to 8 modules, depending on module width. Multiple low-profile ground mounts may be installed next to each other in an east-west direction. These mounts may also be used as roof mounts. The mounts listed have adjustable back legs. Please contact us for information and pricing on mounts for other brands and sizes of module.

Module type	DPW low-profile mount part number	# of modules	Item code	Price
AEE Solar AE-80HE AE-90HE	DP-LPRGM3-AE80HE	3	013-08851	\$370
	DP-LPRGM4-AE80HE	4	013-08852	\$415
	DP-LPRGM5-AE80HE	5	013-08853	\$465
	DP-LPRGM6-AE80HE	6	013-08854	\$510
	DP-LPRGM8-AE80HE	8	013-08855	\$575
Evergreen ES-C-80	DP-LPRGM3-ESC80	3	013-08980	\$370
	DP-LPRGM4-ESC80	4	013-08981	\$415
	DP-LPRGM5-ESC80	5	013-08982	\$465
	DP-LPRGM6-ESC80	6	013-08983	\$510
	DP-LPRGM8-ESC80	8	013-08985	\$575
Evergreen ES-C-120	DP-LPRGM3-ESC120	3	013-08990	\$400
	DP-LPRGM4-ESC120	4	013-08991	\$445
	DP-LPRGM5-ESC120	5	013-08992	\$495
	DP-LPRGM6-ESC120	6	013-08993	\$540
	DP-LPRGM8-ESC120	8	013-08995	\$605
Evergreen ES-A-200 205, 210	DP-LPRGM3-ESA200	3	013-08859	\$605
	DP-LPRGM4-ESA200	4	013-08860	\$670
	DP-LPRGM5-ESA200	5	013-08861	\$730
Kyocera KC85	DP-LPRGM3-KC85	3	013-08862	\$360
	DP-LPRGM4-KC85	4	013-08863	\$400
	DP-LPRGM5-KC85	5	013-08864	\$455
	DP-LPRGM6-KC85	6	013-08865	\$485
Kyocera KD135	DP-LPRGM3-KD135	3	013-08866	\$405
	DP-LPRGM4-KD135	4	013-08867	\$450
	DP-LPRGM5-KD135	5	013-08868	\$520
	DP-LPRGM6-KD135	6	013-08869	\$555
Kyocera KD-180	DP-LPRGM3-KD180	3	013-08870	\$565
	DP-LPRGM4-KD180	4	013-08871	\$630
	DP-LPRGM5-KD180	5	013-08872	\$690
Kyocera KD205	DP-LPRGM3-KD205	3	013-08873	\$600
	DP-LPRGM4-KD205	4	013-08874	\$660
	DP-LPRGM5-KD205	5	013-08875	\$720
Kyocera KD230	DP-LPRGM3-KD230	3	013-08951	\$605
	DP-LPRGM4-KD230	4	013-08952	\$670
	DP-LPRGM5-KD230	5	013-08953	\$730

Module type	DPW low-profile mount part number	# of modules	Item code	Price
Mitsubishi UE125	DP-LPRGM3-MIT125	3	013-08881	\$410
	DP-LPRGM4-MIT125	4	013-08882	\$460
	DP-LPRGM5-MIT125	5	013-08883	\$535
	DP-LPRGM6-MIT125	6	013-08884	\$757
Mitsubishi UD185	DP-LPRGM3-MIT185	3	013-08886	\$515
	DP-LPRGM4-MIT185	4	013-08887	\$570
	DP-LPRGM5-MIT185	5	013-08888	\$625
	DP-LPRGM6-MIT185	6	013-08889	\$680
Mitsubishi UJ230	DP-LPRGM3-MIT230	3	013-08956	\$605
	DP-LPRGM4-MIT230	4	013-08957	\$670
	DP-LPRGM5-MIT230	5	013-08958	\$730
REC Solar AE-US PE	DP-LPRGM3-REC210	3	013-08890	\$605
	DP-LPRGM4-REC210	4	013-08891	\$670
	DP-LPRGM5-REC210	5	013-08892	\$730
SANYO HIT215	DP-LPRGM3-SY215	3	013-08971	\$515
	DP-LPRGM4-SY215	4	013-08972	\$570
	DP-LPRGM5-SY215	5	013-08973	\$625
	DP-LPRGM6-SY215	6	013-08974	\$680
Sharp 165,170, 175,185	DP-LPRGM3-SHP175	3	013-08921	\$515
	DP-LPRGM4-SHP175	4	013-08922	\$570
	DP-LPRGM5-SHP175	5	013-08923	\$625
	DP-LPRGM6-SHP175	6	013-08924	\$680
Sharp 208 216, 224, 230	DP-LPRGM3-SHP208	3	013-08905	\$605
	DP-LPRGM4-SHP208	4	013-08906	\$670
	DP-LPRGM5-SHP208	5	013-08907	\$730
SCHOTT POLY 210, 217, 220	DP-LPRGM3-SCT208	3	013-08960	\$605
	DP-LPRGM4-SCT208	4	013-08961	\$670
	DP-LPRGM5-SCT208	5	013-08962	\$730
SolarWorld SW220 SW230	DP-LPRGM3-SWD230	3	013-08967	\$605
	DP-LPRGM4-SWD230	4	013-08968	\$670
	DP-LPRGM5-SWD230	5	013-08969	\$730



Unirac

PV PoleTops

Unirac PV PoleTops pole mounts use SolarMount Light Rails and clips. The lightweight rails are hollow aluminum extrusions that provide great strength over long spans and help keep shipping costs low. The back-mount clips slip into rail slots and quickly align with module mounting holes for fast and easy assembly.

Unirac mounts use a 6-digit part number. The first 4 digits are determined by the series, described on this page. See table on the next page for mounts for specific modules.

Series 5000



- Mounts to 2½-inch Schedule 40 or 80 steel mounting pole
- Accommodates arrays up to 16 square feet
- Adjusts from 15 to 60 degrees from horizontal

Series 5001



- Mounts to 3-inch Schedule 40 or 80 steel mounting pole
- Accommodates arrays up to 33 square feet
- Adjusts from 0 to 90 degrees from the horizontal

Series 5002



- Mounts to 4-inch Schedule 40 or 80 steel mounting pole
- Accommodates array size up to 45 square feet
- Adjusts from 0 to 90 degrees from horizontal

Series 5003



- Mounts to 4-inch Schedule 40 or 80 steel mounting pole
- Accommodates array size up to 65 square feet
- Adjusts from 0 to 90 degrees from horizontal

Series 5014/5034

- Mounts to 6-inch Schedule 40 or 80 steel mounting pole
- Accommodates array size up to 140 square feet
- Adjusts from 15 to 60 degrees from the horizontal

(Not pictured.)

Module	Unirac part #	No. of modules	Pole size (schd 40)	Item code	Price
AE-80J AE-80HE AE-90HE	500024	1	2.5	014-02405	\$137
	500016	2	2.5	014-02417	\$160
	500117	3	3	014-02533	\$291
	500123	4	3	014-02545	\$322
	500350	6	4	014-02681	\$551
	500337	8	4	014-02663	\$621
Evergreen ES-C-80	500025	1	2.5	014-02405	\$141
	500031	2	2.5	014-02417	\$169
	500108	3	3	014-02515	\$306
	500113	4	4	014-02525	\$345
Evergreen ES-C-120/125	500044	1	2.5	014-02441	\$149
	500129	2	3	014-02557	\$286
	500132	3	3	014-02563	\$322
	500339	4	4	104-02667	\$582
Evergreen ES-A-200	500131	2	3	014-02561	\$319
	500241	3	4	014-02666	\$515
	500315	4	4	014-02632	\$639
Kyocera KC85T	500025	1	2.5	014-02405	\$141
	500031	2	2.5	014-02417	\$169
	500108	3	3	014-02515	\$306
	500113	4	3	014-02525	\$345
	500326	6	4	014-02641	\$565
	500330	8	4	014-02649	\$636
Kyocera KD135GX-LP	500044	1	2.5	014-02441	\$149
	500129	2	3	014-02557	\$286
	500132	3	3	014-02563	\$275
	500229	4	4	014-02619	\$506
	500315	6	6	014-02632	\$972
	501463	8	6	014-03248	\$1,077
Mitsubishi UD185MF5	500128	1	3	014-02555	\$286
	500131	2	3	014-02561	\$319
	500227	3	4	014-02615	\$496
Mitsubishi UE125MF5N	500044	1	2.5	014-02441	\$149
	500129	2	3	014-02557	\$286
	500132	3	3	014-02563	\$322
	500229	4	4	014-02619	\$506
	500349	6	4	014-02680	\$646
REC AE series PE series	500128	1	3	014-02555	\$286
	500132	2	3	014-02563	\$275
	500243	3	4	014-02631	\$522
	500349	4	4	014-02680	\$646

Module	Unirac part #	No. of modules	Pole size (schd 40)	Item code	Price
SANYO HIT205N HIT210N HIT215N	500130	2	3	014-02559	\$302
	500227	3	4	014-02615	\$496
	501453	4	6	014-03239	\$912
	501460	6	6	014-02782	\$1,032
SCHOTT POLY 217 POLY 220	500041	1	2.5	014-02435	\$163
	500120	2	3	014-02539	\$311
	500230	3	4	014-02621	\$494
	500342	4	4	014-02673	\$633
Sharp NE-80EJEA	500034	1	2.5	014-02421	\$140
	500041	2	2.5	014-02435	\$163
	500117	3	3	014-02533	\$291
	500123	4	3	014-02545	\$322
	500350	6	4	014-02681	\$551
	500337	8	4	014-02663	\$621
Sharp ND-123W & L5EIU-125	500044	1	2.5	014-02441	\$149
	500129	2	3	014-02557	\$156
	500132	3	3	014-02563	\$322
	500229	4	4	014-02619	\$506
	500315	6	6	014-02632	\$639
	501463	8	6	014-03248	\$1,077
Sharp NE170 - 185	500027	1	2.5	014-02409	\$140
	500105	2	3	014-02509	\$263
	500237	3	4	014-02628	\$439
	500348	4	4	014-02675	\$557
SunPower SPR-210 to 230	501489	6	6	014-02833	\$974
	500038	1	2.5	014-02429	\$150
	500117	2	3	014-02533	\$291
	500340	4	4	014-02669	\$558
Suntech STP175	501460	6	6	014-02782	\$1,032
	500038	1	2.5	014-02429	\$151
	500118	2	3	014-02535	\$295
	500237	3	4	014-02628	\$469
	501453	4	6	014-03239	\$912
	501460	6	6	014-02782	\$1,032

Unirac makes many more PoleTops models to for other module brands and sizes. Call for information.

Custom ordered PoleTops may take 6 weeks from order to delivery.

PV PoleSides

Unirac PV PoleSides side mounts use a 6-digit part number. The first 4 digits are determined by the series. See description below for each series. See the table on the right for applications. Mounts for other modules are available. Call for information.



Series 4000

For 2" Schedule 40 or 80 steel pole, outside diameter 2.375" (60.3mm)



Series 4001

Includes SolarMount Standard Rails for 2.5" (63.5mm) Schedule 40 or 80 steel pole, outside diameter 2.875" (73.0mm)



Series 4002

Includes SolarMount Standard Rails in three sizes of Schedule 40 or 80 steel poles:

2.5" – OD 2.875" (73.0mm)

3" – OD 3.5" (88.9mm)

4" – OD 4.5" (114.3mm)

Module	Unirac part #	Pole size	No. of modules	Item code	Price
AEE 80/90HE	400204	2.5	1	014-02243	\$194
	400215	3	2	014-02277	\$335
	400244	3	3	014-02262	\$341
	400229	4	4	014-02313	\$429
Evergreen ES-A 200	400248	2.5	1	014-02269	\$233
	400224	4	2	014-02305	\$410
Evergreen ES-C-80	400204	2.5	1	014-02243	\$194
	400213	3	2	014-02273	\$310
	400223	4	3	014-02303	\$384
Evergreen ES-C-120/125	400207	2.5	1	014-02246	\$209
	400214	3	2	014-02275	\$335
	400224	4	3	014-02305	\$410
Mitsubishi UE125MF5	400236	2.5	1	014-02257	\$207
	400233	3	2	014-02287	\$342
	400224	4	3	014-02305	\$410
Mitsubishi UD185MF5	400248	2.5	1	014-02269	\$233
	400224	4	2	014-02305	\$410
	400246	4	3	014-02305	\$448
Mitsubishi UJ235	400248	2.5	1	014-02269	\$233
	400224	4	2	014-02305	\$410
REC AE & PE	400248	2.5	1	014-02269	\$233
	400224	4	2	014-02305	\$410
SCHOTT POLY 220	400248	2.5	1	014-02269	\$233
	400224	4	2	014-02305	\$410

Unirac makes many more PoleSides models to fit other module brands and sizes. Call for modules not listed.

IronRidge

Small-Module Side-of-Pole Mount

These low-cost, universal side-of-pole mounts from IronRidge are available in two sizes to hold a single small module 10.75" to 21.5" in width. Their unique module clamp-and-slot combination eliminates the need for bolt holes in the module by clamping to the inside of the module frame. Mounts have a fully adjustable tilt angle mechanism which can be set for maximum solar module efficiency depending on your location and the season. Two sizes fit most small modules.

Module Fit Chart	
Model	Fit one of the following modules
UNI-SA/13.0	AE-5D, AE-10D, AE-20D AE-10J
	AE20HE, AE-20J
UNI-SA/21.5	AE-30HE, AE-50HE, AE-60HE

Model	Maximum module width	Inside frame dimension	Item code	Price
UNI-SA/13.0	14.0"	5.26" to 11.60"	014-06011	\$57
UNI-SA/21.5	21.5"	12.66" to 20.10"	014-06013	\$65



DPW Solar

POWER-FAB Side Pole Mounts (SPM)

Power-FAB mounts are available in painted steel and mill-finish aluminum versions. Aluminum mounts are listed here; call for pricing on painted steel mounts. Stainless steel module mounting hardware is provided with all mounts.

Stainless steel band clamps are provided with each mount for attachment to poles. Most mounts can be attached to flat vertical surfaces using installer-supplied lag bolts or through-bolts.

Most SPM mounts can be shipped by UPS.

Mounts for other modules are available. Call for information.



Module type	DPW pole-side mount part number	# of modules	Item code	Price
AEE Solar AE-80HE, AE-90HE	DP-SPM1-AE80HE	1	013-09701	\$150
	DP-SPM2-AE80HE	2	013-09702	\$300
	DP-SPM3-AE80HE	3	013-09703	\$385
	DP-SPM4-AE80HE	4	013-09704	\$445
Evergreen ES-A 200 to 215w	DP-SPM1-ESA200	1	013-09708	\$330
	DP-SPM2-ESA200	2	013-09709	\$545
	DP-SPM3-ESA200	3	013-09710	\$705
Evergreen ES-C80	DP-SPM1-ES-C80	1	013-03700	\$230
	DP-SPM2-ES-C80	2	013-03701	\$350
Evergreen ES-C120	DP-SPM1-ES-C120	1	013-03710	\$245
	DP-SPM2-ES-C120	2	013-03711	\$370
Kyocera KC85	DP-SPM1-KC85	1	013-03746	\$165
	DP-SPM2-KC85	2	013-03748	\$325
	DP-SPM3-KC85	3	013-03750	\$395
	DP-SPM4-KC85	4	013-03751	\$440
Kyocera KD135	DP-SPM1-KD135	1	013-09719	\$240
	DP-SPM2-KD135	2	013-09720	\$370
	DP-SPM3-KD135	3	013-09721	\$500
	DP-SPM4-KD135	4	013-09722	\$600
Kyocera KD230	DP-SPM1-KD230	1	013-09727	\$230
	DP-SPM2-KD230	2	013-09728	\$350
	DP-SPM3-KD230	3	013-09729	\$495

Module type	DPW side pole mount part number	# of modules	Item code	Price
Mitsubishi UE125	DP-SPM1-MT125	1	013-09727	\$230
	DP-SPM2-MT125	2	013-09728	\$350
	DP-SPM3-MT125	3	013-09729	\$495
	DP-SPM4-MT125	4	013-09730	\$600
Mitsubishi UD185	DP-SPM1-MT185	1	013-09731	\$270
	DP-SPM2-MT185	2	013-09732	\$445
	DP-SPM3-MT185	3	013-09733	\$565
	DP-SPM4-MT185	4	013-09734	\$750
Mitsubishi UJ230	DP-SPM1-MT230	1	013-09765	\$300
	DP-SPM2-MT230	2	013-09766	\$495
	DP-SPM3-MT230	3	013-09767	\$640
REC Solar AE & PE 200+ series	DP-SPM1-REC210	1	013-09735	\$300
	DP-SPM2-REC210	2	013-09736	\$495
	DP-SPM3-REC210	3	013-09737	\$640
SANYO HIT215N	DP-SPM1-SY215	1	013-09738	\$260
	DP-SPM2-SY215	2	013-09739	\$430
	DP-SPM3-SY215	3	013-09740	\$550
	DP-SPM4-SY215	4	013-09741	\$730
Sharp 165 to 185	DP-SPM1-SHP175	1	013-09750	\$260
	DP-SPM2-SHP175	2	013-09751	\$430
	DP-SPM3-SHP175	3	013-09752	\$550
	DP-SPM4-SHP175	4	013-09753	\$730
Sharp 208, 216, 224, 230	DP-SPM1-SHP205	1	013-09775	\$300
	DP-SPM2-SHP205	2	013-09776	\$495
	DP-SPM3-SHP205	3	013-09777	\$640
SCHOTT POLY 217, 220, 225	DP-SPM1-SCT220	1	013-09785	\$300
	DP-SPM2-SCT220	2	013-09786	\$495
	DP-SPM3-SCT220	3	013-09787	\$640
SolarWorld 220, 230	DP-SPM1-SWD230	1	013-09795	\$300
	DP-SPM2-SWD230	2	013-09796	\$495
	DP-SPM3-SWD230	3	013-09797	\$640

DPW Solar

POWER-FAB Top Pole Mounts (TPM)



Power-fab TPM standard mounts have heavy steel mounting sleeves, elevation pivots and strongbacks that are painted with durable outdoor paint. The module rails are 6061-T6 mill-finish structural aluminum angle. Stainless steel module mounting hardware is provided. Standard top-of-pole mounts are adjustable from 15 degrees to 65 degrees in 10-degree increments and fit on Schedule 40 steel pipe. (A pole size in the table here that has "/80" after its size requires schedule-80 pipe). For harsh environments, these mounts are available with hot-dip-galvanized steel and anodized aluminum. Multiply price by 1.8 for this addition.

Module type	DPW top pole mount part #	No. of modules	Pole size schd 40	Item code	Price
Evergreen ES-C80	DP-TPM1-ES-C80	1	2	013-04440	\$155
	DP-TPM2-ES-C80	2	2	013-04441	\$200
	DP-TPM3-ES-C80	3	2.5	013-04442	\$350
	DP-TPM4-ES-C80	4	3	013-04443	\$385
	DP-TPM6-ES-C80	6	4	013-04444	\$620
	DP-TPM8-ES-C80	8	4	013-04445	\$670
	DP-TPM10-ES-C80	10	6	013-04446	\$1,035
	DP-TPM12-ES-C80	12	6	013-04447	\$1,215
	DP-TPM14-ES-C80*	14	6	013-04448	\$1,340
	DP-TPM16-ES-C80*	16	6	013-04449	\$1,555
Evergreen ES-C120	DP-TPM1-ES-C120	1	2	013-04450	\$165
	DP-TPM2-ES-C120	2	2.5	013-04451	\$310
	DP-TPM3-ES-C120	3	3	013-04452	\$385
	DP-TPM4-ES-C120	4	4	013-04453	\$550
	DP-TPM6-ES-C120	6	4	013-04454	\$715
	DP-TPM8-ES-C120	8	6	013-04455	\$1,000
	DP-TPM9-ES-C120	9	6	013-04456	\$1,000
	DP-TPM10-ES-C120	10	6	013-04457	\$1,275
	DP-TPM12-ES-C120	12	6	013-04458	\$1,400
Evergreen ES-A-200, 205 210	DP-TPM14-ES-C120 *	14	8	013-04459	\$1,855
	DP-TPM16-ES-C120 *	16	8	013-04460	\$2,180
	DP-TPM18-ES-C120 *	18	8/80	013-04461	\$2,380
	DP-TPM1-ESA200	1	2	013-06251	\$180
	DP-TPM2-ESA200	2	3	013-06252	\$395
	DP-TPM3-ESA200	3	4	013-06253	\$590
	DP-TPM4-ESA200	4	4	013-06254	\$720

Module type	DPW top pole mount part #	No. of modules	Pole size schd 40	Item code	Price
Evergreen ES-A-200, 205 210	DP-TPM6-ESA200	6	6	013-06256	\$1,220
	DP-TPM8-ESA200	8	6	013-06258	\$1,600
	DP-TPM9-ESA200*	9	8	013-06259	\$1,775
	DP-TPM10-ESA200*	10	8	013-06260	\$2,275
	DP-TPM12-ESA200*	12	8/80	013-06261	\$2,485
	DP-TPM14-ESA200*	14	8/80	013-06262	\$3,265
	DP-TPM15-ESA200*	15	8/80	013-04905	\$3,480
	DP-TPM16-ESA200*	16	8/80	013-06264	\$3,695
	DP-TPM2-KC85T	2	2	013-04523	\$190
	DP-TPM3-KC85T	3	2.5	013-04524	\$335
	DP-TPM4-KC85T	4	3	013-04525	\$365
	DP-TPM6-KC85T	6	4	013-04527	\$590
	DP-TPM8-KC85T	8	4	013-04529	\$670
	DP-TPM10-KC85T	10	6	013-04531	\$1,035
	DP-TPM12-KC85T	12	6	013-04533	\$1,215
	DP-TPM14-KC85T*	14	6	013-04534	\$1,340
	DP-TPM16-KC85T*	16	6	013-04535	\$1,555
Kyocera KD 135	DP-TPM1-KD135	1	2	013-06171	\$155
	DP-TPM2-KD135	2	2.5	013-06172	\$310
	DP-TPM3-KD135	3	3	013-06173	\$365
	DP-TPM4-KD135	4	4	013-06174	\$525
	DP-TPM6-KD135	6	4	013-06176	\$680
	DP-TPM8-KD135	8	6	013-06178	\$955
	DP-TPM9-KD135	9	6	013-06179	\$1,170
	DP-TPM10-KD135	10	6	013-06180	\$1,215
	DP-TPM12-KD135	12	6	013-06182	\$1,335
	DP-TPM14-KD135*	14	8	013-06184	\$1,765
	DP-TPM16-KD135*	16	8	013-06186	\$2,140
Kyocera KD180	DP-TPM18-KD135*	18	8/80	013-06188	\$2,330
	DP-TPM1-KD180	1	2	013-06191	\$170
	DP-TPM2-KD180	2	3	013-06192	\$370
	DP-TPM3-KD180	3	4	013-06193	\$530
	DP-TPM4-KD180	4	4	013-06194	\$645
	DP-TPM6-KD180	6	6	013-06196	\$1,035
	DP-TPM8-KD180	8	6	013-06198	\$1,390
	DP-TPM9-KD180	9	6	013-06199	\$1,645
	DP-TPM10-KD180*	10	8	013-06200	\$1,900
	DP-TPM12-KD180*	12	8	013-06202	\$2,300
	DP-TPM14-KD180*	14	8/80	013-06204	\$2,525
	DP-TPM16-KD180*	16	8/80	013-06206	\$3,025
Kyocera KD230GX-LB	DP-TPM18-KD180*	18	8/80	013-06208	\$3,545
	DP-TPM1-KD230	1	2	013-06211	\$180
	DP-TPM2-KD230	2	3	013-06212	\$395
	DP-TPM3-KD230	3	4	013-06213	\$590
	DP-TPM4-KD230	4	4	013-06214	\$710
	DP-TPM6-KD230	6	6	013-06215	\$1,220
	DP-TPM8-KD230	8	6	013-06216	\$1,600
	DP-TPM9-KD230	9	8	013-06217	\$1,775
	DP-TPM10-KD230	10	8	013-06218	\$2,275
	DP-TPM12-KD230	12	8/80	013-06219	\$2,485
	DP-TPM14-KD230	14	8/80	013-06220	\$3,265
	DP-TPM15-KD230	15	8/80	013-06221	\$3,645

Module type	DPW top pole mount part #	No. of modules	Pole size schd 40	Item code	Price
Mit-subushi UE125MF	DP-TPM1-MT125	1	2	013-05054	\$160
	DP-TPM2-MT125	2	2.5	013-05055	\$315
	DP-TPM3-MT125	3	3	013-05056	\$390
	DP-TPM4-MT125	4	4	013-05057	\$555
	DP-TPM6-MT125	6	4	013-05058	\$710
	DP-TPM8-MT125	8	6	013-05059	\$985
	DP-TPM9-MT125	9	6	013-05060	\$1,220
	DP-TPM10-MT125	10	6	013-05061	\$1,290
	DP-TPM12-MT125	12	6	013-05062	\$1,375
	DP-TPM14-MT125 *	14	8	013-05063	\$1,810
	DP-TPM16-MT125 *	16	8	013-05064	\$2,190
	DP-TPM18-MT125 *	18	8/80	013-05065	\$2,420
Mitsubi-shi PVUD 180MF5 185MF5 190MF5	DP-TPM1-MT185	1	2	013-05080	\$160
	DP-TPM2-MT185	2	3	013-05081	\$345
	DP-TPM3-MT185	3	4	013-05082	\$505
	DP-TPM4-MT185	4	4	013-05083	\$610
	DP-TPM6-MT185	6	6	013-05085	\$985
	DP-TPM8-MT185	8	6	013-05086	\$1,320
	DP-TPM9-MT185	9	6	013-05086	\$1,570
	DP-TPM10-MT185*	10	8	013-05087	\$1,810
	DP-TPM12-MT185*	12	8	013-05088	\$2,180
	DP-TPM14-MT185*	14	8/80	013-05089	\$2,400
Mitsubi-shi UJ212 UJ218 UJ225 UJ230 UJ235	DP-TPM1-MT235	1	2	013-05130	\$180
	DP-TPM2-MT235	2	3	013-05131	\$395
	DP-TPM3-MT235	3	4	013-05132	\$590
	DP-TPM4-MT235	4	4	013-05133	\$710
	DP-TPM6-MT235	6	6	013-05134	\$1,220
	DP-TPM8-MT235	8	6	013-05135	\$1,600
	DP-TPM9-MT235	9	8	013-05136	\$1,775
	DP-TPM10-MT235	10	8	013-05137	\$2,275
	DP-TPM12-MT235	12	8/80	013-05138	\$2,485
REC Solar 205-230 AE-US PE	DP-TPM14-MT235	14	8/80	013-05139	\$3,265
	DP-TPM1-REC210	1	2	013-06301	\$180
	DP-TPM2-REC210	2	3	013-06302	\$395
	DP-TPM3-REC210	3	4	013-06303	\$590
	DP-TPM4-REC210	4	4	013-06304	\$710
	DP-TPM6-REC210	6	6	013-06306	\$1,220
	DP-TPM8-REC210	8	6	013-06308	\$1,600
	DP-TPM9-REC210*	9	8	013-06309	\$1,775
	DP-TPM10-REC210*	10	8	013-06310	\$2,275
SANYO 205N 210N 215N	DP-TPM12-REC210*	12	8/80	013-06312	\$2,485
	DP-TPM14-REC210*	14	8/80	013-06314	\$3,265
	DP-TPM1-SY215	1	2	013-06429	\$160
	DP-TPM2-SY215	2	3	013-06428	\$345
	DP-TPM3-SY215	3	4	013-06427	\$505
	DP-TPM4-SY215	4	4	013-06426	\$610
	DP-TPM6-SY215	6	6	013-06425	\$985

Module type	DPW top pole mount part #	No. of modules	Pole size schd 40	Item code	Price
SANYO 205N 210N 215N	DP-TPM8-SY215	8	6	013-06424	\$1,320
	DP-TPM10-SY215*	10	8	013-06423	\$1,810
	DP-TPM12-SY215*	12	8	013-06422	\$2,180
	DP-TPM14-SY215*	14	8/80	013-06421	\$2,400
	DP-TPM16-SY215*	16	8/80	013-06420	\$2,885
	DP-TPM18-SY215*	18	8/80	013-06419	\$3,280
Sharp 175 185	DP-TPM1-SHP175	1	2	013-04867	\$160
	DP-TPM2-SHP175	2	3	013-04868	\$345
	DP-TPM4-SHP175	4	4	013-04869	\$610
	DP-TPM6-SHP175	6	6	013-04870	\$985
	DP-TPM8-SHP175	8	6	013-04871	\$1,320
	DP-TPM10-SHP175*	10	8	013-04872	\$1,810
	DP-TPM12-SHP175*	12	8	013-04873	\$2,180
	DP-TPM14-SHP175*	14	8/80	013-04874	\$2,400
	DP-TPM16-SHP175*	16	8/80	013-04875	\$2,885
	DP-TPM18-SHP175*	18	8/80	013-04876	\$3,280
Sharp 208 216 224 230	DP-TPM1-SHP224	1	2	013-04895	\$180
	DP-TPM2-SHP224	2	3	013-04896	\$395
	DP-TPM3-SHP224	3	4	013-04897	\$590
	DP-TPM4-SHP224	4	4	013-04898	\$710
	DP-TPM6-SHP224	6	6	013-04899	\$1,220
	DP-TPM8-SHP224	8	6	013-04900	\$1,600
	DP-TPM9-SHP224	9	8	013-04901	\$1,775
	DP-TPM10-SHP224*	10	8	013-04902	\$2,275
	DP-TPM12-SHP224*	12	8/80	013-04903	\$2,485
	DP-TPM14-SHP224*	14	8/80	013-04904	\$3,265
SCHOTT Solar POLY 210 to 225	DP-TPM15-SHP224*	15	8/80	013-04905	\$3,645
	DP-TPM1-SCT200	1	2	013-04760	\$180
	DP-TPM2-SCT200	2	3	013-04761	\$395
	DP-TPM3-SCT200	3	4	013-04762	\$590
	DP-TPM4-SCT200	4	4	013-04763	\$710
	DP-TPM6-SCT200	6	6	013-04764	\$1,220
	DP-TPM8-SCT200	8	6	013-04765	\$1,600
	DP-TPM9-SCT200	9	8	013-04766	\$1,775
	DP-TPM10-SCT200	10	8	013-04767	\$2,275
	DP-TPM12-SCT200	12	8/80	013-04768	\$2,485
Solar-World SW220 SW230	DP-TPM14-SCT200	14	8/80	013-04769	\$3,265
	DP-TPM15-SCT200	15	8/80	013-04770	\$3,645
	DP-TPM1-SWD230	1	2	013-04695	\$180
	DP-TPM2-SWD230	2	3	013-04696	\$395
	DP-TPM3-SWD230	3	4	013-04697	\$590
	DP-TPM4-SWD230	4	4	013-04698	\$710
	DP-TPM6-SWD230	6	6	013-04699	\$1,220
	DP-TPM8-SWD230	8	6	013-04700	\$1,600
	DP-TPM9-SWD230	9	8	013-04701	\$1,775
	DP-TPM10-SWD230	10	8	013-04702	\$2,275
	DP-TPM12-SWD230	12	8/80	013-04703	\$2,485
	DP-TPM14-SWD230	14	8/80	013-04704	\$3,265
	DP-TPM15-SWD230	15	8/80	013-04705	\$3,645

* Must be shipped by truck freight. All other mounts ship by UPS.

Wattsun

Active Trackers



Wattsun active trackers use electronic sensors and motor or actuator drives to track the sun from east to west. During partly cloudy conditions, the tracker fixes on the brightest area of the sky, capturing the maximum amount of sunlight available. At night it returns to the morning sunrise position, ready to start tracking when the sun rises again. Tracking can increase a PV array's power production from 10 to 50 percent depending on the season and location. They are particularly effective when greater power is required in the summer months, such as when a large amount of water pumping is needed. Wattsun trackers deliver a significant increase in the amount of water pumped and provide a more constant water flow during the day. The gallons-per-day increase is greatest in the summer when water is needed the most. They may also be cost-effective for net-metered utility grid-tie systems that can produce large amounts of electricity in the summer, to be used as credit

toward a high winter power bill.

Azimuth trackers automatically track the sun's path by rotating the PV array around the pipe, providing greater stability for larger arrays. The corners do not protrude down towards the ground or stick up in the air to catch the wind. The bottom edge of the array always remains parallel to the ground and requires less ground clearance than tilt and roll trackers. Wattsun's azimuth trackers provide nearly 270 degrees of rotational movement and can adjust from 5 to 75 degrees of elevation tilt.

AZ-125 Trackers

The AZ-125 gear-drive, azimuth tracker comes standard as a single-axis tracker with manual seasonal tilt adjustment. It is powered by a 24 VDC drive motor running a high quality worm and gear drive. With the addition of the dual-axis option (order separately), the AZ-125 can capture virtually all the available power the sun delivers.

AZ-225 Trackers

The AZ-225 gear-drive, azimuth tracker is for very large arrays. It can hold over 2 kW of solar modules. It is powered by a 24VDC motor running a heavy-duty ball bearing/ worm gear drive. It comes standard with the dual-axis option, enabling it to capture the maximum amount of solar energy. Mounts on an 8" or 10" Schedule 40 steel pole. 10" poles will require an 8" section welded to top.



If your system voltage is not 24 VDC, you will need a Wattsun voltage converter. See option table below.

Wattsun model	Description	Item code	Price
12-24 15W for 12V battery	Required for 12 VDC AZ-125 Trackers	014-07118	\$125
48-24 LVC	Steps down 48 VDC from battery or 36VDC from array to 24 VDC for controller on AZ-125 tracker	014-07116	\$58
PPT-48-5R24	Steps down 48 VDC from battery to 24 VDC for controller. One required per two AZ-125 or one AZ-225	014-07117	\$219
PPT-48-10R24	Steps down 48 VDC from battery to 24 VDC. Will power four AZ-125 trackers or three AZ-225 trackers	014-07119	\$295
DR-4524 for pumping	Accepts 120-370 VDC input to power tracker controller from a high voltage water pumping array. Needs to be mounted in a raintight box if located outside. Also accepts 115 or 230 VAC for one AZ-125 tracker	014-07110	\$165
IDEC PS5R-SF24	Accepts 115 or 230 VAC input to power tracker controller from the AC grid when no backup battery bank is present. One required per two AZ-125 trackers or one AZ-225 tracker. Needs to be mounted in a raintight box if located outside	014-07115	\$84
Dual-axis option	Add automatic elevation tracking to the AZ-125 tracker. The DA Option is included in the price of the AZ-225 trackers	014-07018	\$525
Manual controls	Exterior switches on the controller cover plate. Allows for the owner to turn off automatic tracking and then rotate the tracker east or west and/or up and down. Useful for dumping snow or to lay the tracker flat in extremely high winds	014-07030	\$125
Manual control kit	Field upgrade kit for Version 3 controllers. V3 controllers are "two-piece" style and the sensor is independent of the main control box. Should be installed by an electrician or other certified personnel	014-07032	\$150

Wattsun Tracker Prices

Module	Module quantity	Wattsun drive	Dual axis	Steel pipe ID	Item code	Price
AE-80/90HE	12	AZ-125	optional	6"	014-08001	\$3,385
	16	AZ-125	optional	6"	014-08002	\$3,385
	24	AZ-225	included	8"	014-08004	\$6,250
	28	AZ-225	included	8"	014-08005	\$7,175
Evergreen ES-A-200 205, 210	6	AZ-125	optional	6"	014-07347	\$3,385
	9	AZ-225	included	6"	014-07349	\$6,250
	12	AZ-225	included	8"	014-07350	\$7,175
Kyocera KC85T	8	AZ-125	optional	6"	014-07431	\$3,385
	12	AZ-125	optional	6"	014-07433	\$3,385
	16	AZ-125	optional	6"	014-07435	\$3,385
	24	AZ-225	included	8"	014-07436	\$6,645
Kyocera KD135	8	AZ-125	optional	6"	014-07466	\$3,385
	10	AZ-125	optional	6"	014-07467	\$3,385
	15	AZ-225	included	8"	014-07469	\$6,250
	16	AZ-225	included	8"	014-07470	\$6,645
	20	AZ-225	included	8"	014-07471	\$7,175
Kyocera 180	6	AZ-125	optional	6"	014-07455	\$3,385
	8	AZ-125	optional	6"	014-07456	\$3,385
	12	AZ-225	included	8"	014-07457	\$6,645
	16	AZ-225	included	8"/80	014-07458	\$7,175
Kyocera KD205GX-LDU	6	AZ-125	optional	6"	014-07473	\$3,385
	8	AZ-125	optional	6"	014-07474	\$3,385
	12	AZ-225	included	8"	014-07475	\$6,645
	16	AZ-225	included	8"/80	014-07476	\$7,175
Kyocera KD235GX-LB	6	AZ-125	optional	6"	014-07478	\$3,385
	8	AZ-225	included	8"	014-07479	\$6,250
	9	AZ-225	included	8"	014-07480	\$6,250
	12	AZ-225	included	8"/80	014-07481	\$7,175
Mitsubishi UE125	8	AZ-125	optional	6"	014-08171	\$3,385
	9	AZ-125	optional	6"	014-08172	\$3,385
	10	AZ-125	optional	6"	014-08173	\$3,385
	15	AZ-225	included	8"	014-08176	\$6,250
	16	AZ-225	included	8"	014-08177	\$6,645
Mitsubishi UD185	20	AZ-225	included	8"	014-08181	\$7,175
	6	AZ-125	optional	6"	014-08087	\$3,385
	8	AZ-125	optional	6"	014-08088	\$3,385
Mitsubishi UJ235	12	AZ-225	included	8"	014-08090	\$6,645
	6	AZ-125	optional	6"	014-08185	\$3,385
	9	AZ-225	included	8"	014-08186	\$6,250
	12	AZ-225	included	8"/80	014-08187	\$7,175

Module	Module quantity	Wattsun drive	Dual axis	Steel pipe ID	Item code	Price
REC AE & PE 205 to 245	6	AZ-125	optional	6"	014-08205	\$3,385
	8	AZ-225	included	8"	014-08208	\$6,250
	9	AZ-225	included	8"	014-08209	\$6,250
	12	AZ-225	included	8"/80	014-08212	\$7,175
SANYO HIT190 to 205	6	AZ-125	optional	6"	014-07546	\$3,385
	8	AZ-125	optional	6"	014-07548	\$3,385
	9	AZ-125	optional	6"	014-07549	\$3,385
	12	AZ-225	included	8"	014-07552	\$6,250
	16	AZ-225	included	8"/80	014-07556	\$7,175
SANYO HIT 205N, 210N, 215N	6	AZ-125	optional	6"	014-07557	\$3,385
	8	AZ-125	optional	6"	014-07558	\$3,385
	9	AZ-125	optional	6"	014-07559	\$3,385
	12	AZ-225	included	8"	014-07560	\$6,250
	16	AZ-225	included	8"/80	014-07561	\$7,175
SCHOTT POLY 210,217, 220, 225	6	AZ-125	optional	6"	014-07585	\$3,385
	8	AZ-225	included	8"	014-07586	\$6,250
	9	AZ-225	included	8"	014-07587	\$6,250
	12	AZ-225	included	8"/80	014-07588	\$7,175
Sharp 165, 175,185	6	AZ-125	optional	6"	014-07653	\$3,385
	8	AZ-125	optional	6"	014-07655	\$3,385
	9	AZ-125	optional	6"	014-07656	\$3,385
	12	AZ-225	included	8"	014-07657	\$6,250
	16	AZ-225	included	8"/80	014-07658	\$7,175
Sharp 208, 216, 224, 230	6	AZ-125	optional	6"	014-07692	\$3,385
	8	AZ-225	included	8"	014-07694	\$6,250
	9	AZ-225	included	8"	014-07696	\$6,250
	12	AZ-225	included	8"/80	014-07698	\$7,175
SolarWorld SW220, SW230	6	AZ-125	optional	6"	014-07765	\$3,385
	9	AZ-225	included	8"	014-07766	\$6,250
	12	AZ-225	included	8"/80	014-07767	\$7,175
SunPower 210	6	AZ-125	optional	6"	014-07845	\$3,385
	8	AZ-125	optional	6"	014-07846	\$3,385
	12	AZ-225	included	8"	014-07847	\$6,250
	16	AZ-225	included	8"/80	014-07848	\$7,175

Call us for pricing on other Wattsun trackers for different modules.

Zomeworks

Universal Track Rack

Passive Solar Tracker for PV Modules

The Zomeworks passive Track Rack uses no motors, no gears and no controls that can fail. The sun's heat moves liquid from side to side, allowing gravity to turn the Track Rack and follow the sun.

The Zomeworks Universal Track Rack system allows for almost limitless adjustment in both the east-west and north-south directions. Available in five standard sizes for holding 2 to 32 modules, Universal Track Racks are designed to fit all common photovoltaic modules. This flexibility translates to faster delivery, better quality and overall economy. The F-Series Track Racks ship partially assembled for easy installation. The new UTRF168HD comes with heavy duty rails. Both UTRF168 trackers come with a high wind kit. All of these mounts come with stainless steel and zinc-plated hardware and have a 10-year standard warranty.

Please specify how many of which brand of module are to be placed on the tracker. The tracker will be customized with the correct amount of hardware, and in some cases the rail length will be adjusted for better fit. Module quantities followed by an asterisk require one additional rail set at an extra charge, specified in the last row of table below. If the quantity is followed by double asterisks, order two additional rail sets. Call us about Zomeworks trackers for modules not listed.



Zomeworks model	UTR020	UTRK040	UTRF64	UTRF90	UTRF120	UTRF168-2	UTRF168-2-HD
Item code	014-09020	014-09043	014-09064	014-09090	014-09120	014-09130	014-09132
Price	\$712	\$1,450	\$1,920	\$2,170	\$2,452	\$3,636	\$4,213
Pole size schd 40 steel	2.5"	3"	6"	6"	6"	8"	8"
Min. pole height	76"	84"	96"	108"	120"	144"	144"
Min. pole depth	38"	42"	48"	54"	60"	72"	72"
Shipping weight	101 lbs	170 lbs	400 lbs	490 lbs	525 lbs	650 lbs	680 lbs
Module type	Number of modules that fit each Zomeworks model (top row)						
Evergreen							
ES-C120	1	2,3	4,5	6-8	10	12-14	N/A
ES-A-200 to 210	1	2	3, 4	5*	6, 7*	8, 9*	10HD
Kyocera							
KC-80, 85T	1, 2	3, 4	5, 6, 7*, 8, 9*, 10	12	14*, 15*, 16*	18*, 20**, 21**, 22**, 24**	N/A
KD-135	1, 2	3	4, 5*, 6*	8	9*, 10	12, 14*	N/A
KD-180	1	2	3,4	5*, 6	8	9*, 10*, 11*	N/A
KD-205GX-LP	1	2	3,4	5*	6	8, 9*	10HD
SANYO							
HIT205N, 210N, 215N	1	2,3	4	6	8	10	12HD
SCHOTT Solar							
POLY 217, 220, 225	1	2	3	4,5*	6*	8, 9*	N/A
SolarWorld							
SW165, SW175	1	2	3, 4	5*, 6*	8*	9*, 10	12HD
SW220, SW230	1	2	3	4,5*	6*	8, 9*	N/A
Sharp							
NE165, NE170, NT175	1	2	3, 4	6	8	10	12
ND208, ND216, ND224	1	2	3	4	6	8, 9*	N/A
Mitsubishi							
UE125MF4	1	2, 3	4, 5*, 6*	8	10	12, 13*, 14, 15*, 16*	N/A
UD185MF5	N/A	2	3, 4	5*, 6*	8*	10	N/A
REC Solar							
PE & AE-US-205 to 230	1	2	3	4, 5*	6*	8-9*	N/A
Description						Item code	Price
* Additional rail for mounts with a quantity followed by an asterisk in chart. Order two for quantities followed by two asterisks.						014-09155	\$291

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Unirac

RapidRac G10 Ballasted Flat Roof Mounting System

Unirac's universal ballasted flat roof solution accommodates a wide range of modules and requires very few or no penetrations, depending on location and building codes. Minimal parts, faster installation, reduced labor expenses and versatility – all customer-driven demands that helped engineer this unique flat roof solution.

The RapidRac was developed through significant computational fluid dynamics and wind tunnel engineering. The efficient design, built at a fixed 10 degree tilt angle, optimizes natural convective cooling of the modules and was designed to meet the requirements of current applicable building codes.

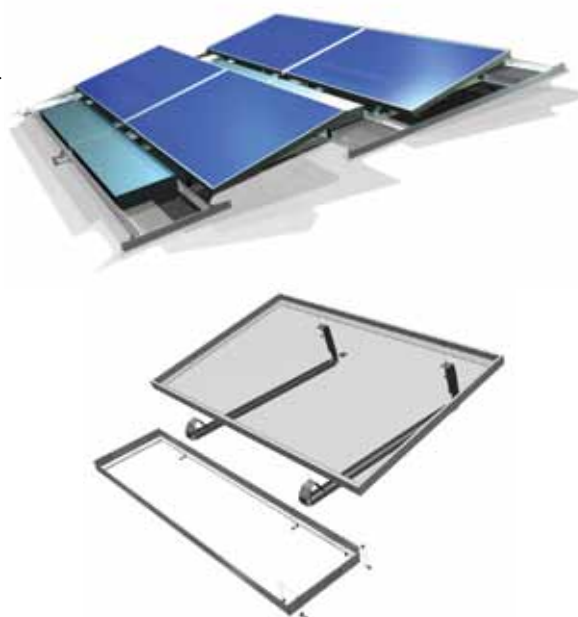
The RapidRac is custom made to the exact specifications of the module you will be racking. We must have the exact model number of the modules being installed.

Unirac offers an attachment option for the RapidRac, the RapidFoot, which can be used for seismic restraint and for ballast trade off, allowing for a reduction in roof dead load.

10-year limited product warranty, 5-year limited finish warranty.

A mounting system includes module support rails, ballast pans, Stainless-steel bolts and WEEB grounding washers. Other hardware may be required depending on roof type and penetrations required.

Order one RapidRac with Module frame for each module in the array. Order one additional RapidRac ballast tray for each module on the north end of the array.



Description	Unirac part #	Item code	Price
RapidRac Ballast Tray (only)	Call	Call	\$99
RapidRac ballast tray with module mount	Call	Call	\$198
RapidFoot assembly	310370	015-02261	\$67
Galvalume flashing #1	990120	015-02265	\$6.56
Patch for flashing	990161	015-02269	\$6.68

Please call us with any questions! Our contact information is on the cover.

Ballasted Flat Roof Mounts (beginning on the previous page)

Ballasted PV mounting systems are used when the roof is a flat or very slightly pitched surface and the installation requires minimal or no penetrations. They are usually used in commercial systems. The advantages are short installation time, minimal penetrations of the roof means less chance of leakage,

but there can be high weight loading on the roof, and the modules will have a very low tilt angle. It is critical that the proper amount of ballast is applied in a ballasted system and at the correct location. Professional design assistance and engineering support is highly recommended when using a ballasted system.

DPW Solar

POWER-FAB CRS PV Ballasted Flat Roof Mounting System

The POWER-FAB CRS top-clamping module mounting system is designed to install fast and provide a secure mounting structure for any framed module. The system's ballasted design minimizes the impact of dead loads on the roof and eliminates roof penetrations. The CRS system typically adds less weight per square foot than competitive products. Full-scale wind tunnel results qualify the system's performance in high wind speed areas. The POWER-FAB CRS system offers a variety of tilt angles from 5 to 25 degrees and features the flexibility to design the racking around roof obstructions and shaded areas to maximize the number of modules and total energy production.



Contact us for other tilt angle and wind load options. Full scale wind tunnel data used to calculate ballast weights along with ASCE 07-05 and building code requirements.

*Tilt angles from 5 - 25 degrees available.

Standard Product Wind Loading Specifications

Wind load	Standard tilt angle*	Roof loading	Category
90 mph	10 degree	< 5 lbs/ft ²	Exposure C
130 mph	5 degree	< 5 lbs/ft ²	Exposure C

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AET

Rayport Ballasted Flat Roof Mounting System

The Rayport ballasted mount for flat roof commercial installations is made from all stainless steel parts, providing best-available corrosion protection in every environmental condition. Extensive engineering and loading analysis from AET's product design group help to provide a low-cost, high-quality product that minimizes assembly time. Rayport ballasted roof mounts can be used with any module that are between 31.8" and 39.1" wide. Modules are mounted in a landscape orientation, at a 10 degree angle. Installed dimensions are module length x (number of modules per row) east to west by 58.65 inches x (the number of rows)

Rayport mounts are wind tunnel tested to 120 mph.

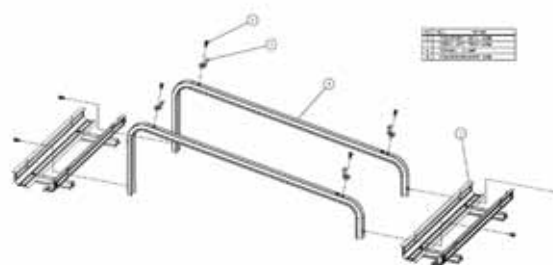
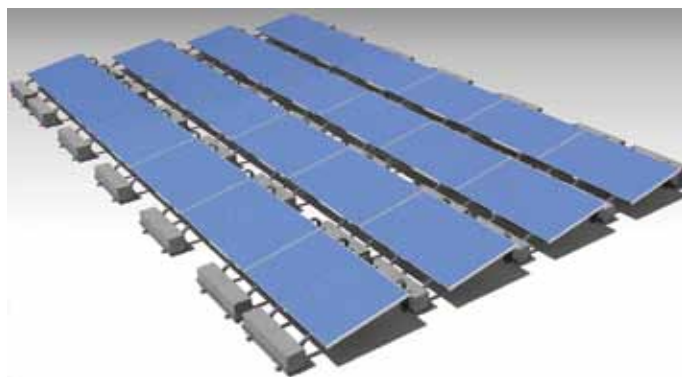
Integrated fasteners and built-in WEEB grounding between the modules and the frames allow for quick, easy installation.

Parts required

A mounting system includes module support rails, ballast pans, module clips, bolts and ground lugs. If you consider modules running north to south as columns and modules running east to west as rows, you will need the following:

1. Number of module supports = number of modules x 2
2. Number of modules clamps = number of modules x 4
3. Number of ballast pans = (number of columns + 1) x (number of rows + 1)
4. Number of bolts = (number of ballast pans + number of modules) x 4

Contact us for help with the required ballast which will depend on building height, module type and exposure category. We can provide that informations and help with final system design.



Part #	Description	Module frame depth (inches)	Item code	Price
80001-953	Support rail, Evergreen ES-A200		015-03001	\$38
80001-991	Support rail, REC 205-235 AE or PE		015-03006	\$38
80001-982	Support rail, Canadian Solar 160-240		015-03004	\$38
80001-990	Support rail, Kyocera 175-210		015-03005	\$38
80001-798	Support rail, SunPower 210-230		015-03023	\$38
80001-993	Support rail, SCHOTT POLY 210-225		015-03020	\$38
80001-992	Support rail, Suntech 190-210		015-03008	\$38
80001-994	Support rail, Sharp 176-230		015-03009	\$38
80009	Ballast tray		015-03010	\$54
80013	Bolt		015-03019	\$0.45
80022-34	Module clamp for SolarWorld SW220, 230	1.34	015-03012	\$1.30
80022-36	Module clamp for Kyocera KD175-210GX-LP	1.4	015-03013	\$1.30
80022-40	Module clamp for Canadian Solar 160-240	1.57	015-03014	\$1.30
80022-41	Module clamp for Evergreen 180-195	1.6	015-03015	\$1.30
80022-43	Module clamp for REC 205-235AE-US	1.69	015-03016	\$1.30
80022-46	Module clamp for Evergreen ES-A 200, Kyocera GX-LB, GX-LPU	1.8	015-03017	\$1.30
80022-57.5	Module clamp for Sharp 176-198	2.26	015-03018	\$1.30
80022-50	Module clamp for SCHOTT POLY225	1.96	015-03021	\$1.30
80022-38	Module clamp for REC PE series	1.5	015-03026	\$1.30

Commercial Grade Ground Mount Racking

The following pages include large ground mount racks from several leading manufacturers. They are designed to be a cost effective solution for installing large quantities of PV modules,

from kilowatts to megawatts. Each product has its benefits. Some can be adjusted seasonally and some are a fixed tilt angle. Please contact us for system design assistance.

Unirac

U-LA

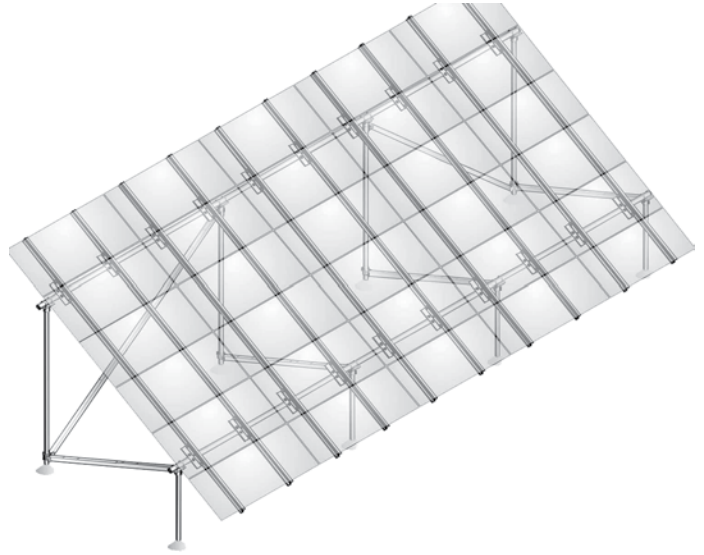
U-LA is a mounting system using large arrays of PV modules designed to generate 3 kilowatts or more. The size of the system is limited only by the available space for the array. The U-LA can be installed on the ground or on commercial flat roofs.

All U-LAs are custom systems designed by Unirac to accommodate site conditions and applicable codes. To specify a system, please use the on-line questionnaire at ...

<http://www.unirac.com/equestionnaire.php>

... to generate a bill of materials.

With all required U-LA components and specifications for installer-supplied materials such as pipe and concrete provided by Unirac's online questionnaire, we can give you a price quote and delivery lead time.



Unirac part#	Description	Item code	Price
2 inch Pipe Caps, Feet and Sliders, Zinc plated steel			
330001	1 ea front cap	014-01378	\$68
330002	1 ea rear cap	014-01363	\$52
330005	1 ea slider, 1 flange	014-01365	\$40
3 inch Pipe Caps, Feet and Sliders, Zinc steel			
330010	1 ea front cap	014-01373	\$95
330011	1 ea rear cap	014-01374	\$79
330014	1 ea Slider, 1 Flange	014-01375	\$66
2 inch Pipe Caps and Sliders, Mill finish aluminum			
330019	1 ea front cap	014-01353	\$41
330020	1 ea rear cap	014-01354	\$41
330021	1 ea slider	014-01356	\$20
2 inch Braces and Brackets, Mill finish aluminum			
330101	1 ea 7 ft brace	014-01370	\$65
330102	1 ea 10.5 ft brace	014-01371	\$94
330103	1 ea 14 ft brace	014-01372	\$123
330104	1 ea rail mounting bracket	014-01357	\$18.08
3 inch Braces and Brackets, Mill finish aluminum			
330105	1 ea 7 ft brace	014-01376	\$104
330106	1 ea 10.5 ft brace	014-01377	\$150
330107	1 ea 14 ft brace	014-01379	\$198
330108	1 ea rail mounting bracket	014-01360	\$21.12

ADVERTISEMENT

SnapNrack

Ground Mount system



The SnapNrack ground rail and rail-to-pipe clamp simplifies installing a multi-pole, fixed tilt ground mount. The ground rail accepts all the standard module mounting clamps and the pipe clamp is designed for 1.5-inch Schedule 40 steel pipe substructures. It can be installed with tilt angles up to 45 degrees and in locations that may see wind speeds up to 105 mph. For module attachment hardware refer to the SnapNrack roof mount section of this catalog, pages 28-30.



Description	Item code	Price
Ground Rail		
SnapNrack ground rail set 162" - clear	015-09819	\$189
SnapNrack ground rail set 208" - clear	015-09820	\$244
SnapNrack ground rail custom length	015-09835	Call
Ground Rail Parts		
SnapNrack pipe clamp 1.5"	015-09998	\$9
SnapNrack pipe clamp 1.5" 12 pack	015-09999	\$98
TEE, Single Socket, 1.5" pipe, KEE Klamp 10-8	172-05310	\$12.50
Swivel Socket, 1.5" pipe, KEE Klamp 10-88	172-05410	\$18.50
Plug End, Plastic pipe cap 1.5", KEE Klamp 77-8	172-05510	\$2.95

HatiCon Solar

These ground mount structures are optimized for easy assembly using pre-assembled components, an adaptable, malleable foundation, and compatibility with all framed modules. Height-adjustable module clamps and end clamps allow for maximum flexibility when mounting framed modules from 28 to 52 mm thick. Thin Film clamps are available for First Solar modules and other frameless laminates.

HatiCon Solar's proprietary Sigma post can be rammed into the soil or cast into concrete footings to serve as the ground interface for the system. Soil conditions determine the best option for each site. The HatiCon Solar ground mount system significantly reduces the need for intensive site surveying in the installation of framed photovoltaic modules and allows the racking design to follow the landscape harmoniously. Module inclination is adjustable from 15° to 35° and the system utilizes a proprietary bearing in conjunction with adjustable vertical posts to minimize footing inconsistencies and problems.

The HatiCon system is a custom designed turn-key product designed for large scale installations. Provide us with your project and site details and we will obtain a custom quote including all necessary hardware from foundation footings to the module mounting hardware.



DPW Solar

Multi-Pole Mounts

Designed to mount on 3-, 4- and 6-inch Schedule 40 galvanized steel pipe (installer supplied), it supports 2 to 4 modules high in landscape orientation. These mounts can be horizontally expanded as far as necessary by adding more vertical pipe supports. This type of mount requires fewer ground penetrations than traditional ground mounts and offer a full range of seasonal elevation adjustability.

Multi-Pole mounts are ideal for shade and carport structures because the design is capable of significant ground clearance. When seeking recommendations on foundation and pipe sizing, be ready to provide the following site-specific details: maximum design wind speed, exposure category, soil type, steepest expected tilt angle, and above-ground clearance.



Multi-pole Mount Rail Sets (includes module rails and clamp sets, rail-to-pipe brackets, and associated hardware)									
Module	Qty	DPW #	Item code	Price	Module	Qty	DPW #	Item code	Price
Evergreen ES-A-200/205/210	2	MPM2-EG200	013-02006	\$410	SCHOTT POLY 217, 220, 225	2	MPM2-SCT220	013-02050	\$415
	3	MPM3-EG200	013-02001	\$540		3	MPM3-SCT220	013-02051	\$545
	4	MPM4-EG200	013-02007	\$660		4	MPM4-SCT220	013-02052	\$665
Canadian Solar CS6P-170 to 210	2	MPM2-CS1200	013-02011	\$415	Sharp NE-165/170U1 NT-175/185U1	2	MPM2-SHP170	013-02029	\$400
	3	MPM3-CS1200	013-02012	\$545		3	MPM3-SHP170	013-02030	\$545
	4	MPM4-CS1200	013-02013	\$665		4	MPM4-SHP170	013-02031	\$665
Kyocera KD180GX-LP	2	MPM2-KD180	013-02017	\$415	Sharp ND-208/216/ 224U1F	2	MPM2-SHP224	013-02032	\$415
	3	MPM3-KD180	013-02018	\$545		3	MPM3-SHP224	013-02033	\$545
	4	MPM4-KD180	013-02019	\$665		4	MPM4-SHP224	013-02034	\$665
Kyocera KD205/210 GX-LP	2	MPM2-KD205	013-02020	\$415	SolarWorld SW220, 230	2	MPM2-SWD230	013-02038	\$415
	3	MPM3-KD205	013-02021	\$545		3	MPM3-SWD230	013-02039	\$545
	4	MPM4-KD205	013-02022	\$665		4	MPM4-SWD230	013-02040	\$665
Mitsubishi PV-UD175 to 190MF5	2	MPM2-MT180	013-02023	\$400	SunPower SPR210/215/ 220/225/230	2	MPM2-SPR220	013-02041	\$395
	3	MPM3-MT180	013-02024	\$510		3	MPM3-SPR220	013-02042	\$505
	4	MPM4-MT180	013-02025	\$605		4	MPM4-SPR220	013-02043	\$600
Mitsubishi UJ6 - 212 to 235	2	MPM2-MT225	013-02061	\$415	Suntech STP170/175/ 180S-24/Ab-1	2	MPM2-STP175	013-02044	\$395
	3	MPM3-MT225	013-02062	\$545		3	MPM3-STP175	013-02045	\$505
	4	MPM4-MT225	013-02063	\$665		4	MPM4-STP175	013-02046	\$600
REC AE-US 210 to 230 PE Series	2	MPM2-REC210	013-02014	\$415	Suntech STP190/200/ 210Ub	2	MPM2-STP200	013-02047	\$415
	3	MPM3-REC210	013-02015	\$545		3	MPM3-STP200	013-02048	\$545
	4	MPM4-REC210	013-02016	\$665		4	MPM4-STP200	013-02049	\$665

Multi-Pole Mount Pipe Caps (includes U-bolts)				
Size	Description	DPW #	Item code	Price
3" SCH40	For connecting 3" vertical to 3" horizontal pipe	PC-3V3H	013-02002	\$200
4" SCH40	For connecting 4" vertical to 3" horizontal pipe	PC-4V3H	013-02000	\$220
4" SCH40	For connecting 4" vertical to 4" horizontal pipe	PC-4V4H	013-02003	\$230
6" SCH40	For connecting 6" vertical to 3" horizontal pipe	PC-6V3H	013-02005	\$265
6" SCH40	For connecting 6" vertical to 3" horizontal pipe	PC-6V4H	013-02004	\$275

